

SAMSUNG

GSM TELEPHONE

GT-E1225F(E1225T Common)

SERVICE *Manual*

GSM TELEPHONE



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Notice

All functionality, features, specifications and other product information provided in this document including, but not limited to, the benefits, design, pricing, components, performance, availability, and capabilities of the product are subject to change without notice or obligation. Samsung reserves the right to make changes to this document and the product described herein, at anytime, without obligation on Samsung to provide notification of such change.

1. Safety Precautions

1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.
Take specially care of tuning or test, because the specification of cellular phone is sensitive for surrounding interference(RF noise).
- Be careful to use a kind of magnetic object or tool, because performance of parts is damaged by the influence of magnetic force.
- Surely use a standard screwdriver when you disassemble this product, otherwise screw will be worn away.
- Use a thicken twisted wire when you measure level.
A thicken twisted wire has low resistance, therefore error of measurement is few.
- Repair after separate Test Pack and Set because for short danger (for example an overcurrent and furious flames of parts etc) when you repair board in condition of connecting Test Pack and tuning on.
- Take specially care of soldering, because Land of PCB is small and weak in heat.
- Surely tune on/off while using AC power plug, because a repair of battery charger is dangerous when tuning ON/OFF PBA and Connector after disassembling charger.
- Don't use as you pleases after change other material than replacement registered on SEC System.
Otherwise engineer in charge isn't charged with problem that you don't keep this rules.

1-2. ESD(Electrostatically Sensitive Devices) Precaution

Several semiconductor may be damaged easily by static electricity. Such parts are called by ESD (Electrostatically Sensitive Devices), for example IC,BGA chip etc. Read Precaution below.

You can prevent from ESD damage by static electricity.

- Remove static electricity remained your body before you touch semiconductor or parts with semiconductor. There are ways that you touch an earthed place or wear static electricity prevention string on wrist.
- Use earthed soldering steel when you connect or disconnect ESD.
- Use soldering removing tool to break static electricity. Otherwise ESD will be damaged by static electricity.
- Don't unpack until you set up ESD on product. Because most of ESD are packed by box and aluminum plate to have conductive power,they are prevented from static electricity.
- You must maintain electric contact between ESD and place due to be set up until ESD is connected completely to the proper place or a circuit board.

2. Specification

2-1. GSM General Specification

	EGSM 900	DCS1800
Freq. Band[MHz] Uplink/Downlink	880~915 925~960	1710~1785 1805~1880
ARFCN range	0~124 & 975~1023	512~885
Tx/Rx spacing	45MHz	95MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	270.833kbps 3.692us
Time Slot Period/Frame Period	576.9us 4.615ms	576.9us 4.615ms
Modulation	0.3GMSK	0.3GMSK
MS Power	33dBm~5dBm	30dBm~0dBm
Power Class	4 (max +33dBm)	1 (max +30dBm)
Sensitivity	-102dBm	-100dBm
TDMA Mux	8	8
Cell Radius	35Km	2Km

2-2. GSM TX power class

TX Power control level	GSM900
5	33±2 dBm
6	31±2 dBm
7	29±2 dBm
8	27±2 dBm
9	25±2 dBm
10	23±2 dBm
11	21±2 dBm
12	19±2 dBm
13	17±2 dBm
14	15±2 dBm
15	13±2 dBm
16	11±3 dBm
17	9±3dBm
18	7±3 dBm
19	5±3 dBm

TX Power control level	DCS1800
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

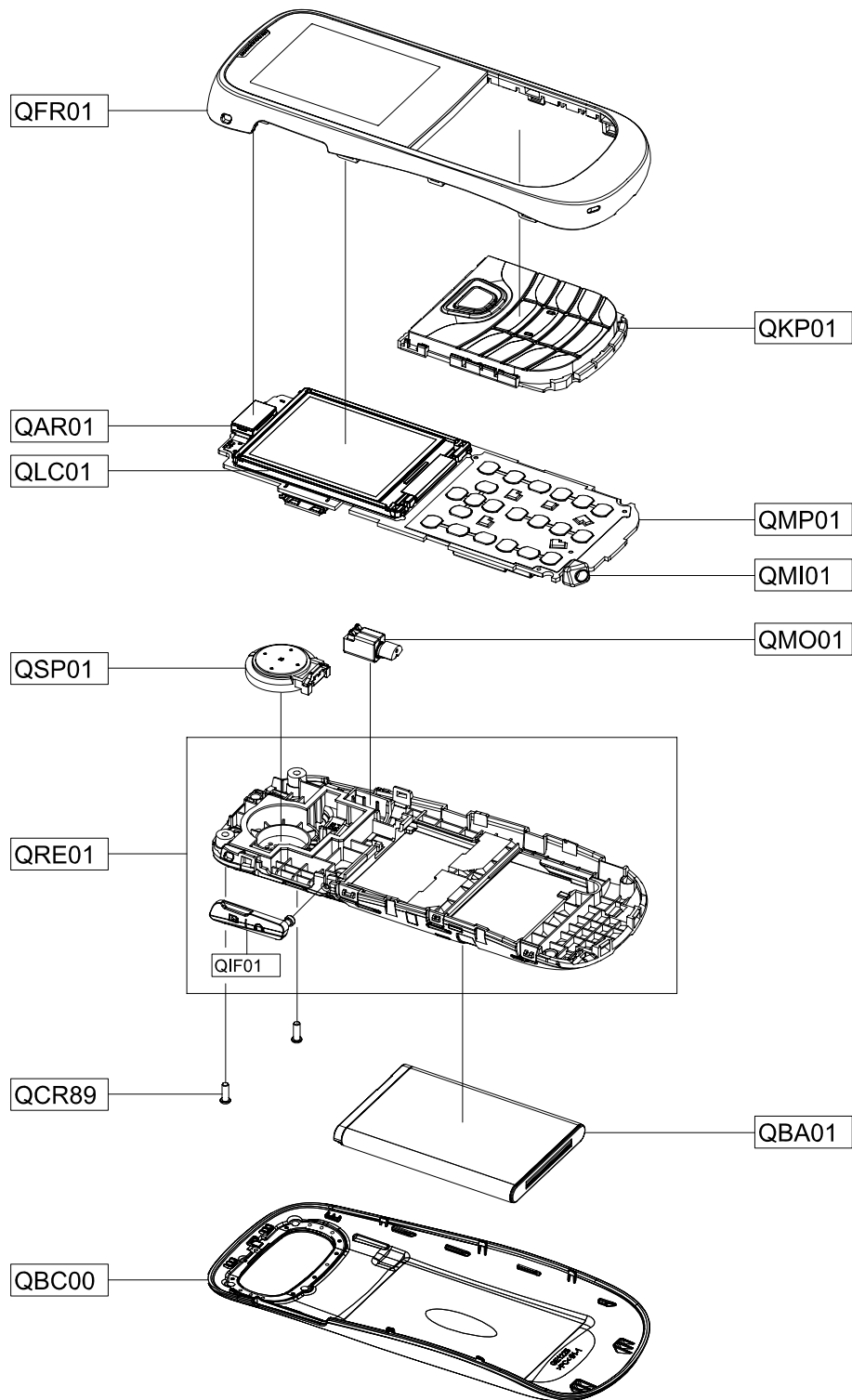
3. Operation Instruction and Installation

Main Function

- Dual SIM socket (900/1800) - [not dual standby]
- PNX4850
- 1.77" TFT QVGA LCD
- SMS
- SOS Message, Whisper Mode, Fake Call
- 40 Polyphonic Melody
- FM Radio,
- LED Torchlight
- 3.5 ϕ Earjack

4. Exploded View and Parts List

4-1. Cellular phone Exploded View



4-2. Cellular phone Parts list

Design LOC		Discription	SEC CODE
QSP01		SPEAKER	3001-002543
QAR01		AUDIO-RECEIVER	3009-001491
QCR89		SCREW-TAPPING	6002-001428
QMI01		MICROPHONE-ASSY-GT_E1225F	GH30-00674A
QMO01		MOTOR DC-SCH-S369	GH31-00392A
QBA01		INNER BATTERY PACK-800MAH,BLK,UNI,MAIN	GH43-03241A
QMP01		A/S ASSY-PBA MAIN(TURK) GT-E1225F	GH82-05161A
QLC01		ASSY LCD-1.77 QQVGA SCH-B559 ASSY	GH96-04327A
QFR01		ASSY CASE-FRONT	GH98-16860A
QBC00		ASSY COVER-BATTERY	GH98-16862A
QKP01		ASSY KEYPAD-MAIN	GH98-16863A
QRE01		ASSY CASE-REAR	GH98-16861A
	QIF01	PMO COVER-IF V2	GH72-60638A

5. MAIN Electrical Parts List

SEC CODE	Design LOC	Description
0403-001688	ZD200	DIODE-ZENER
0406-001231	ZD100	DIODE-TVS
0406-001231	ZD302	DIODE-TVS
0406-001231	ZD400	DIODE-TVS
0406-001231	ZD401	DIODE-TVS
0406-001231	ZD402	DIODE-TVS
0406-001231	ZD403	DIODE-TVS
0406-001231	ZD404	DIODE-TVS
0406-001231	ZD405	DIODE-TVS
0406-001267	ZD300	DIODE-TVS
0406-001286	ZD303	DIODE-TVS
0406-001286	ZD406	DIODE-TVS
0406-001361	ZD301	DIODE-TVS
0407-001002	D200	DIODE-ARRAY
0505-002664	TR200	FET
0601-002846	LED300	LED
0601-002846	LED301	LED
0601-002846	LED302	LED
0601-002846	LED303	LED
0601-002941	LED304	LED
1001-001610	U101	IC
1001-001635	U400	IC
1001-001664	U200	IC
1003-001440	TR100	IC
1108-000217	UME200	MEMORY
1201-002933	PAM100	PAM
1201-002944	U100	IC
1202-001068	U401	IC
1203-005512	U300	IC
1203-005686	U103	IC
1204-003155	U104	IC
1205-003923	UCP200	IC
1404-001221	TH200	THERMISTOR
2007-000138	R103	R-CHIP
2007-000138	R213	R-CHIP
2007-000138	R400	R-CHIP

SEC CODE	Design LOC	Description
2007-000138	R404	R-CHIP
2007-000139	R301	R-CHIP
2007-000140	R102	R-CHIP
2007-000140	R310	R-CHIP
2007-000140	R311	R-CHIP
2007-000140	R312	R-CHIP
2007-000140	R313	R-CHIP
2007-000141	R300	R-CHIP
2007-000141	R305	R-CHIP
2007-000141	R401	R-CHIP
2007-000141	R402	R-CHIP
2007-000143	R100	R-CHIP
2007-000143	R107	R-CHIP
2007-000143	R108	R-CHIP
2007-000148	R200	R-CHIP
2007-000148	R201	R-CHIP
2007-000151	R117	R-CHIP
2007-000151	R209	R-CHIP
2007-000151	R212	R-CHIP
2007-000162	R110	R-CHIP
2007-000163	R407	R-CHIP
2007-000164	R408	R-CHIP
2007-000170	R403	R-CHIP
2007-000172	R302	R-CHIP
2007-000172	R306	R-CHIP
2007-000172	R307	R-CHIP
2007-000172	R314	R-CHIP
2007-000173	R308	R-CHIP
2007-000173	R309	R-CHIP
2007-001119	R106	R-CHIP
2007-001288	R112	R-CHIP
2007-001298	R303	R-CHIP
2007-001298	R304	R-CHIP
2007-001311	R101	R-CHIP
2007-001333	R104	R-CHIP
2007-001333	R105	R-CHIP

SEC CODE	Design LOC	Description
2007-002970	R111	R-CHIP
2007-003025	R109	R-CHIP
2007-007008	R113	R-CHIP
2007-007008	R114	R-CHIP
2007-007698	R204	R-CHIP
2007-010071	R203	R-CHIP
2203-000359	C317	C-CERAMIC
2203-000386	C400	C-CERAMIC
2203-000386	C403	C-CERAMIC
2203-000386	C408	C-CERAMIC
2203-000425	C224	C-CERAMIC
2203-000425	C229	C-CERAMIC
2203-000679	C302	C-CERAMIC
2203-000725	C316	C-CERAMIC
2203-000812	C120	C-CERAMIC
2203-000812	C122	C-CERAMIC
2203-000812	C126	C-CERAMIC
2203-000812	C127	C-CERAMIC
2203-000812	C227	C-CERAMIC
2203-000812	C406	C-CERAMIC
2203-000812	C407	C-CERAMIC
2203-000940	C412	C-CERAMIC
2203-000940	C413	C-CERAMIC
2203-000995	C114	C-CERAMIC
2203-001072	C129	C-CERAMIC
2203-001072	C404	C-CERAMIC
2203-001153	C219	C-CERAMIC
2203-002443	C105	C-CERAMIC
2203-002443	C106	C-CERAMIC
2203-002443	C109	C-CERAMIC
2203-002443	C309	C-CERAMIC
2203-002443	C310	C-CERAMIC
2203-002443	C311	C-CERAMIC
2203-002443	C415	C-CERAMIC
2203-002525	C411	C-CERAMIC
2203-002525	C417	C-CERAMIC

SEC CODE	Design LOC	Description
2203-002677	C131	C-CERAMIC
2203-002709	C112	C-CERAMIC
2203-002709	C213	C-CERAMIC
2203-002709	C214	C-CERAMIC
2203-005053	C113	C-CERAMIC
2203-005057	C132	C-CERAMIC
2203-005234	C130	C-CERAMIC
2203-005281	C117	C-CERAMIC
2203-005281	C121	C-CERAMIC
2203-005281	C123	C-CERAMIC
2203-005281	C124	C-CERAMIC
2203-005344	C223	C-CERAMIC
2203-005481	C101	C-CERAMIC
2203-005481	C104	C-CERAMIC
2203-006048	C118	C-CERAMIC
2203-006048	C203	C-CERAMIC
2203-006048	C204	C-CERAMIC
2203-006048	C205	C-CERAMIC
2203-006048	C228	C-CERAMIC
2203-006048	C230	C-CERAMIC
2203-006048	C234	C-CERAMIC
2203-006048	C301	C-CERAMIC
2203-006048	C303	C-CERAMIC
2203-006048	C402	C-CERAMIC
2203-006048	C405	C-CERAMIC
2203-006048	C418	C-CERAMIC
2203-006048	C419	C-CERAMIC
2203-006137	C111	C-CERAMIC
2203-006208	C207	C-CERAMIC
2203-006208	C208	C-CERAMIC
2203-006399	C202	C-CERAMIC
2203-006399	C206	C-CERAMIC
2203-006399	C209	C-CERAMIC
2203-006399	C210	C-CERAMIC
2203-006399	C211	C-CERAMIC
2203-006399	C212	C-CERAMIC

SEC CODE	Design LOC	Description
2203-006399	C233	C-CERAMIC
2203-006399	C307	C-CERAMIC
2203-006399	C308	C-CERAMIC
2203-006562	C125	C-CERAMIC
2203-006562	C231	C-CERAMIC
2203-006562	C312	C-CERAMIC
2203-006562	C313	C-CERAMIC
2203-006562	C410	C-CERAMIC
2203-006626	C102	C-CERAMIC
2203-006626	C103	C-CERAMIC
2203-006824	C200	C-CERAMIC
2203-006824	C201	C-CERAMIC
2203-006824	C226	C-CERAMIC
2203-007240	TA400	C-CERAMIC
2203-007279	C119	C-CERAMIC
2203-007279	TA300	C-CERAMIC
2203-007425	C222	C-CERAMIC
2703-000213	L101	INDUCTOR
2703-002170	L111	INDUCTOR
2703-002200	L406	INDUCTOR
2703-002200	L407	INDUCTOR
2703-002204	L112	INDUCTOR
2703-002208	L109	INDUCTOR
2703-002208	L110	INDUCTOR
2703-002313	L402	INDUCTOR
2703-002313	L404	INDUCTOR
2703-002367	L106	INDUCTOR
2703-003064	L103	INDUCTOR
2703-003184	L201	INDUCTOR
2703-003476	L300	INDUCTOR
2703-003476	L411	INDUCTOR
2801-003856	OSC201	CRYSTAL
2801-004805	OSC200	CRYSTAL
2904-001879	F100	FILTER
3301-001158	L200	BEAD
3301-001729	L400	BEAD

SEC CODE	Design LOC	Description
3301-001729	L401	BEAD
3301-001729	L403	BEAD
3301-001729	L405	BEAD
3301-001885	L301	BEAD
3301-001885	L302	BEAD
3301-001885	L303	BEAD
3301-001885	L304	BEAD
3301-001885	L305	BEAD
3301-001885	L408	BEAD
3301-001885	L409	BEAD
3301-001885	L410	BEAD
3301-001970	L102	BEAD
3404-001152	TAC300	SWITCH-TACT
3705-001731	RFS100	CONNECTOR-COAXIAL
3709-001488	SIM200	CONNECTOR-CARD
3709-001488	SIM201	CONNECTOR-CARD
3710-002683	IFC300	SOCKET-INTERFACE
3711-007437	BTC200	HEADER-BATTERY
3722-003101	EAR400	JACK-EARPHONE
GH70-03951A	SC100	SHIELD CAN CLIP
GH70-03951A	SC101	SHIELD CAN CLIP
GH70-03951A	SC102	SHIELD CAN CLIP
GH70-03951A	SC104	SHIELD CAN CLIP
GH70-03951A	SC105	SHIELD CAN CLIP
GH70-03951A	SC106	SHIELD CAN CLIP
GH70-03951A	SC107	SHIELD CAN CLIP
GH70-03951A	SC109	SHIELD CAN CLIP

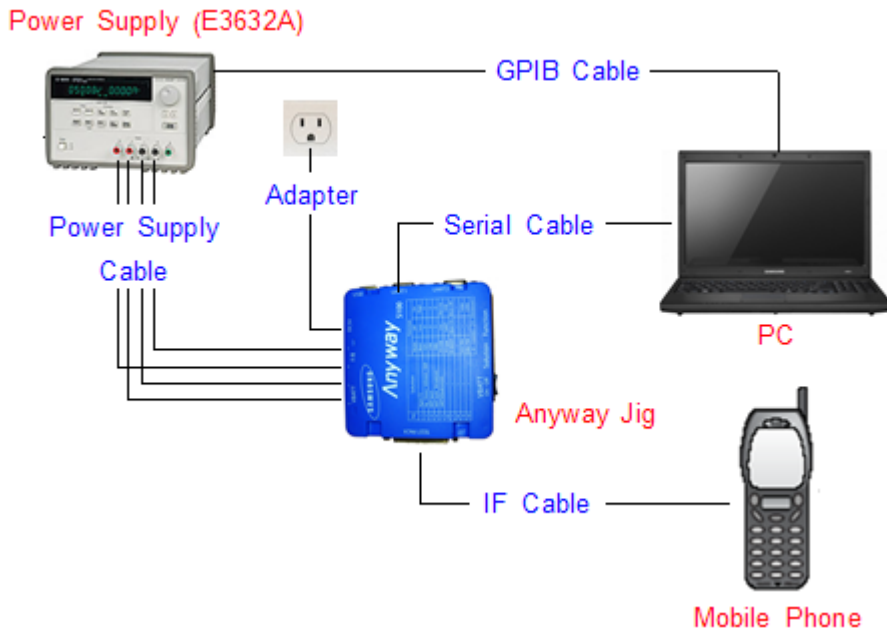
Please consult the GSPN website (Samsung Portal) for the most recent version of the product's part list.

6. Level 1 Repair

6-1. S/W Download

6-1-1. Pre-requisite for S/W Downloading

- Diagram of connection

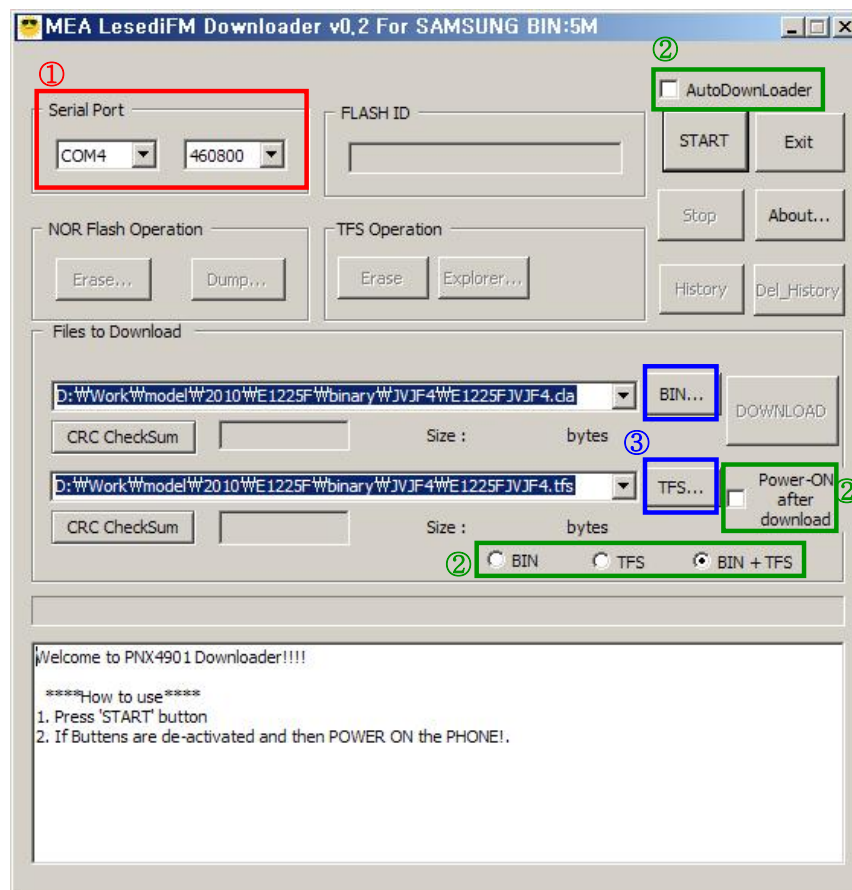


6-2-2. How to download S/W

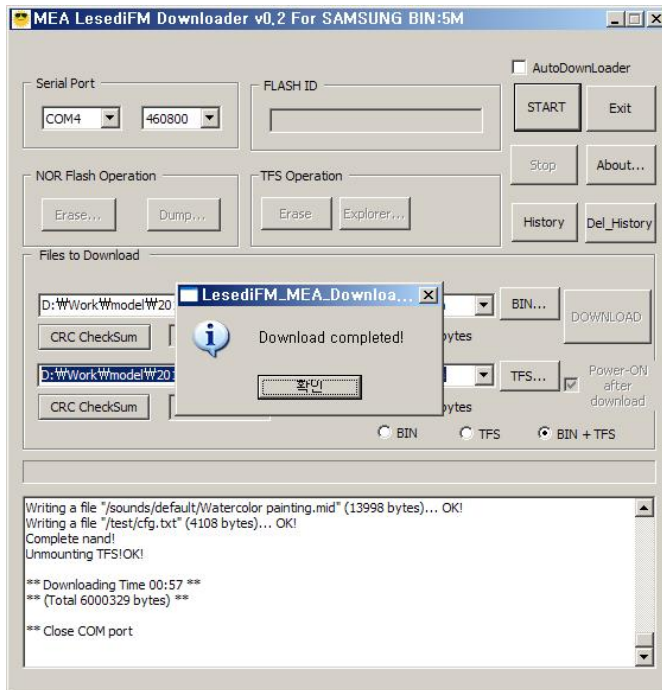
- 1) Download the drivers from anysvc, and then install the drivers. If your pc already has the drivers, you can skip this step.
 - SAMSUNG Mobile USB DRIVER(4.40.7.0) v1.6.zip
 - msxml.msi
 - SSDN_V1.1.808.7165_SETUP_whql.exe
- 2) Download the files from anysvc.
 - The latest s/w download program of GT-E1225F
 - The latest s/w binary files of GT-E1225F
- 3) Unpack .zip file in their folder. (To save binary file in each folder is recommended.)
- 4) Run the s/w download program(execution file).
 - LesediFM_MEA_Downloader

5) Setting the download program

- ① Select the connected serial port and the rate of speed.
 - Click the boxes of file info section.
 - Select correct binary files.
- ② Select Mode.
 - "AutoDownloader" :
Check the box If you don't have to do NOR, TFS Operation.
You can download without click 'DOWNLOAD' button
 - "Power-ON after download"
Check the box If you want to turn on the phone automatically after download.
 - BIN: Binary download Only
TFS: TFS download Only
BIN+TFS: Both download
- ③ Select the correct binary and TFS file



- 6) Click the 'START' button and connect Phone with PC
 - ① Connect Phone though IF Cable.
 - ② Port will be readied and 'Download' will be activated.
- 7) Click the 'Download', and then download is progressed automatically.
- 8) If the download is completed rightly, it shows the content, 'Download complete!'.



※ Caution. Never disconnect during the S/W downloading.

7. Level 2 Repair

7-1. Disassembly and Assembly Instructions

7-1-1. Disassembly

Unscrew 2 points at the REAR case



Disassemble the REAR as below sequence



- 1) Be careful not to make scratch and molding damage!
- 2) Torque : 1.1 ~ 1.3 Kgf · cm

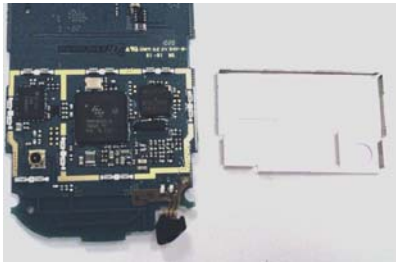
- 1) Be careful not to make scratch and molding damage!
- 2) Be careful not to damage IF COVER



- 1) Be careful not to make scratch and molding damage!

- 1) Be careful not to make scratch and molding damage!

Disassemble the SHIELD CAN



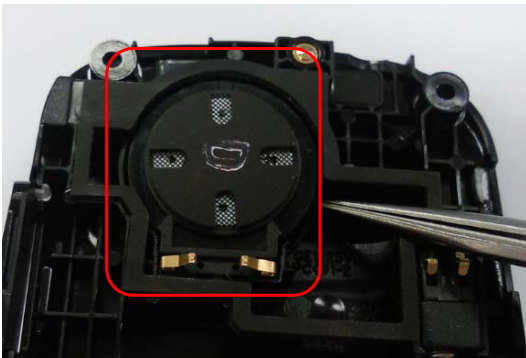
1) Be careful not to make scratch and molding damage!

Separate the KEYPAD from the FRONT



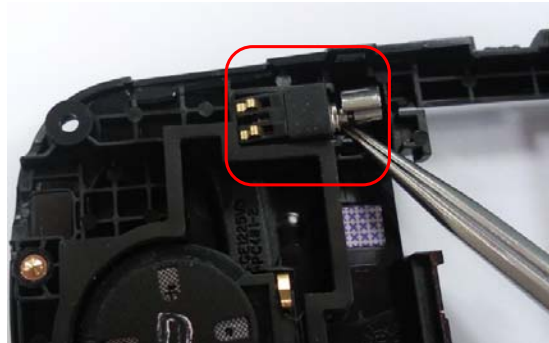
1) Be careful not to make scratch and molding damage!

Separate the SPEAKER from the REAR.



1) Be careful not to make scratch and molding damage!
2) Be careful speaker contact pin damage!

Separate the MOTOR from the REAR.



1) Be careful not to make scratch and molding damage!
2) Be careful motor contact pin damage!

7-1-2 Assembly

Assemble the SHIELD CAN



1) Be careful not to make scratch and molding damage!

INSERT KEYPAD to FRONT.



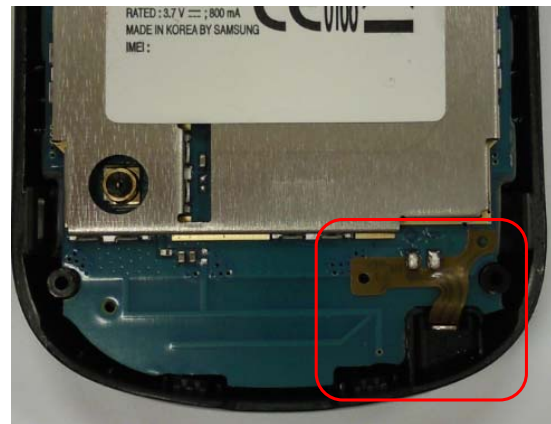
1) Be careful not to make scratch and molding damage!

INSERT SPEAKER, MOTOR to REAR.



- 1) Be careful not to make scratch and molding damage!
- 2) When insert MOTOR, use PUSHING JIG.
- 3) CHECK SPEAKER, MOTOR insert tightly.

INSERT PBA TO FRONT. INSERT MIC TO FRONT.



- 1) Be careful not to make scratch and molding damage!
- 2) Be careful nothing goes between LCD and FRONT.

COMBINE REAR FROM TOP TO BOTTOM.



- 1) Be careful not to make scratch and molding damage!
- 2) Be careful not to damage IF COVER.

Screw 2 points at the REAR case.

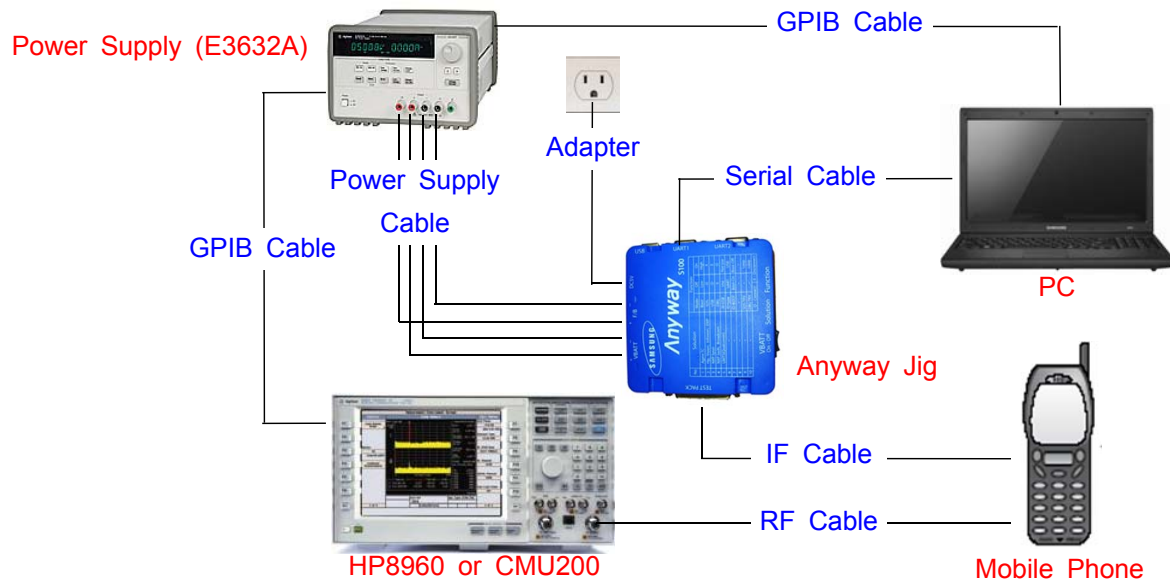


- 1) Be careful not to make scratch and molding damage!
- 2) Torque : 1.1 ~ 1.3 Kgf · cm





7-2. Calibration

7-2-1. Pre-requisite for calibration

- Diagram of connection



- Service Parts

Anyway Jig	Adaptor	IF Cable	RF Cable
			
GH99-36900A	GH99-38251A	GH39-01160A	GH39-00985A

- Standard Parts

Power Supply Cable	Serial Cable	GPIB Cable
		

- HP8960 has to be satisfied the condition like below to do calibration.

Option list upgrade need	E1968A-202	GSM & EDGE mobile test application
	Phase & Ampl vs Time	GSM Polar cal option (WCDMA - Qualcomm solution)
	CDMA2000 TA	CDMA2000 mobile test
Firmware	E1968A A.06.56	GSM/GPRS/EDGE
	E1987A Fast switching A.06.19	GSM/GPRS/EDGE/WCDMA/HSDPA/CDMA2000
	E1962B B.10.11	IS-2000/IS-95/AMPS
Hardware	002	002 RF source 2
	003	003 Flexible radio

System Config Screen			
Control	Configuration Summary		Utilities
Instrument Setup	Instrument Information Application: Fast Switch Test App E1987A A.06.19 Firmware Format: WCDMA GPIB Address: 14 Lan IP Address: 10.244.74.240 Subnet Mask: 255.255.255.0 Default Gateway: Last Calibration: 07 Feb 2007 Serial Number: 6B46490431		Message Log
Format Switch	Options Installed 002 RF Source 2 003 Flexible Radio Link 004 Digital Bus		License Status Detail GSM TA T 330 days GPRS TA T 330 days EGPRS TA T 330 days Phase & Ampl vs Time T 330 days 8PSK Distortion Cal N WCDMA TA T 330 days WCDMA Video Call T 330 days F10 Lists All Applications
Application Selection	FDD Test Sys Type: UTRA FDD		
RF IN/OUT Amptd Offset			
RF Output Port			
RF In/Out			
1 of 2			1 of 2
<DCAS>			

Select this menu for details

License status summary

System Config Screen																																																																			
Control	License Status Detail		Licenses																																																																
Instrument Setup	<table border="1"> <thead> <tr> <th>Application/Option</th> <th>Model Number</th> <th>Status</th> <th>Expiration</th> </tr> </thead> <tbody> <tr> <td>GSM TA</td> <td>E1968A-101</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>GPRS TA</td> <td>E1968A-102</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>EGPRS TA</td> <td>E1968A-103</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>Phase & Ampl vs Time</td> <td>E1968A-410</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>8PSK Distortion Cal</td> <td>E1968A-417</td> <td>NLIC</td> <td></td> </tr> <tr> <td>WCDMA TA</td> <td>E1963A</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>WCDMA Video Call</td> <td>E1963A-401</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>HSDPA Test Nodes</td> <td>E1963A-403</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>Fast Device Tune</td> <td>F0201A</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>CDMA2000 TA</td> <td>E1962B</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>CDMA2000 RelA</td> <td>E1962B-401</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>CDMA2000 Authenticat</td> <td>E1962B-403</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>AMPS Enhancement</td> <td>E1962B-402</td> <td>TEMP</td> <td>330 days</td> </tr> <tr> <td>CDMA2000 Digital Bus</td> <td>E1962B-405</td> <td>NLIC</td> <td></td> </tr> <tr> <td>CDMA2000 H-Unit Sync</td> <td>E1962B-406</td> <td>NLIC</td> <td></td> </tr> </tbody> </table>		Application/Option	Model Number	Status	Expiration	GSM TA	E1968A-101	TEMP	330 days	GPRS TA	E1968A-102	TEMP	330 days	EGPRS TA	E1968A-103	TEMP	330 days	Phase & Ampl vs Time	E1968A-410	TEMP	330 days	8PSK Distortion Cal	E1968A-417	NLIC		WCDMA TA	E1963A	TEMP	330 days	WCDMA Video Call	E1963A-401	TEMP	330 days	HSDPA Test Nodes	E1963A-403	TEMP	330 days	Fast Device Tune	F0201A	TEMP	330 days	CDMA2000 TA	E1962B	TEMP	330 days	CDMA2000 RelA	E1962B-401	TEMP	330 days	CDMA2000 Authenticat	E1962B-403	TEMP	330 days	AMPS Enhancement	E1962B-402	TEMP	330 days	CDMA2000 Digital Bus	E1962B-405	NLIC		CDMA2000 H-Unit Sync	E1962B-406	NLIC		GSM WCDMA CDMA
Application/Option	Model Number	Status	Expiration																																																																
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Format Switch	License Status Definition Key LIC - Licensed TEMP - Time Expiring NLIC - Not Licensed UNKN - Unknown/Undefined		Return																																																																
Application Selection	FDD Test Sys Type: UTRA FDD																																																																		
RF IN/OUT Amptd Offset																																																																			
RF Output Port																																																																			
RF In/Out																																																																			
1 of 2																																																																			
<DCAS>																																																																			

Phase & Ampl vs Time Option

GSM Polar Cal Option(WCDMA - Qualcomm Solution),
 If no option, it is impossible to do GSM EDGE cal of WCDMA.
 (GSM Tx Power error)

- CMU200 has to be satisfied the condition like below to do calibration.

	H/W Option		
	Option No.	Option Name	Option Description
GSM/ EGPRS GPRS/	CMU200	Main Frame	
	CMU-B11/B12	OCXO	Need to have one of those.
	CMU-B21(v14)	Universal Signaling Unit	It may needed when the DUT based on AGERE chipset, because it need a live for GSM, it need CMU-B54(v14). BCH signal for Calibration. To working
	CMU-B54(v14)*		This is daughter board for GSM Signaling. It's attached on the B21(v14).
	CMU-U65(v04)	DSP for Wideband Measurement	Support DSP measurement, and also works as a buffer. It needed to support support up to 128 steps, CMU-U65(v04) support up to 500 steps. Dynamic Power" Calibration. In case of "Polar Modulation" CMU-U65(v02) only "Polar Modulation" test and "EDGE
WCDMA/ GSM/ EGPRS GPRS/	CMU200	Main Frame	
	CMU-B11/B12	OCXO	Need to have one of those.
	CMU-B21(v14)	Universal Signaling Unit	It may needed when the DUT based on AGERE chipset, because it need a live for GSM, it need CMU-B54(v14). BCH signal for Calibration. To working
	CMU-B66**	Versatile Baseband Unit (Tx)	Baseband board for UL, but it's now included in CMU-B68. So no longer exist.
	CMU-B68	Versatile Baseband Unit (Tx + Rx)	Baseband board for WCDMA UL/DL
	CMU-U65(v04)***	DSP for Wideband Measurement	Support DSP measurement, and also works as a buffer. It needed to support "Polar Modulation" test and "EDGE Dynamic Power" Calibration.

	S/W Option		
	Option No.	Option Name	Option Description
GSM/ GPRS/ EGPRS	CMU-K21*	GSM900-MS	Signaling SW for GSM 900 Band
	CMU-K22*	GSM1800-MS	Signaling SW for GSM 1800 Band
	CMU-K23*	GSM1900-MS	Signaling SW for GSM 1900 Band
	CMU-K24*	GSM850-MS	Signaling SW for GSM 850 Band
WCDMA/ GSM/ GPRS/ EGPRS	CMU-K48	IQvsSlot	SW support "Polar Modulation Calibration"
	CMU-K65	WCDMA-UE : Tx-tests(3GPP/FDD)	SW support Tx Measurement of WCDMA
	CMU-K66	WCDMA-UE : DL-Generator(3GPP/FDD)	SW Support DL Generator for WCDMA.

*These options were needed because some old phones needed to have a live BCH to do a Rx Calibration(AFC and AGC).

**CMU-B66 may can be found at the HW option list. But this option is no longer exist, because it's now included in the option CMU-B68, only in case of very old CMU200 which supporting the WCDMA Testing.

***CMU-U65 has 2 kind of revision. The difference is the amount of buffer memory inside. This influence to the "Polar Modulation Calibration" test, in case of CMU-U65(v02) only supports up to 128 steps of test, CMU-U65(v04) supports up to 500 Steps. Currently Samsung UMTS calibration doing that with about 300 steps, so it requires CMU-U65(v0.4)

7-2-2. How to do calibration

- 1) Download the the latest calibration program from anysvc, and unpack the .zip file in the same folder.

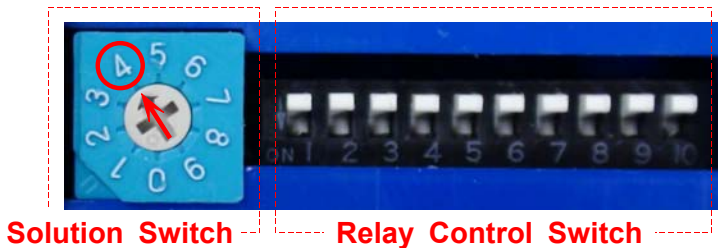
- GT-E1225F_CAL_V002.exe
- GT-E1225F_CAL_V002.zip

- 2) Check solution and the relay control switch setting of anyway jig.

- Solution switch : 4

No	Solution
4	NXP Swift, Broadcom

- Relay control switch : all switches must be turn off.



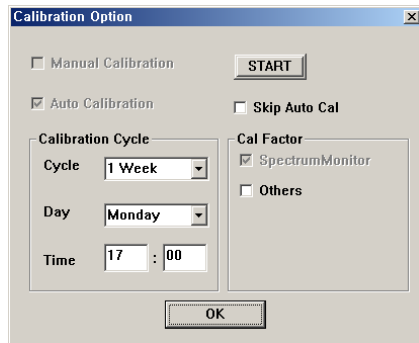
Solution Switch

Relay Control Switch

- 3) Run the execution file(.exe).

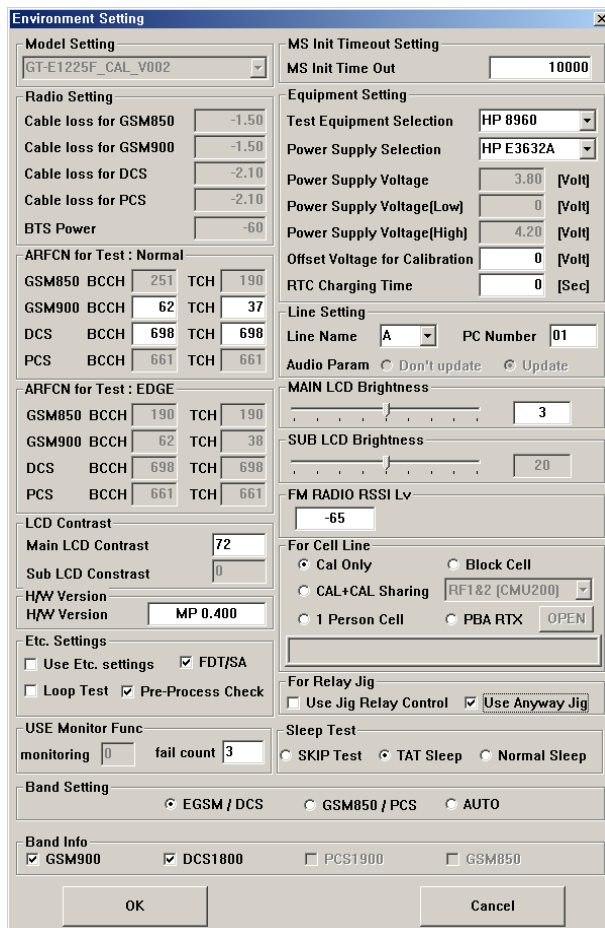
- GT-E1225F_CAL_V002.exe

4) Click the button, 'OK'.

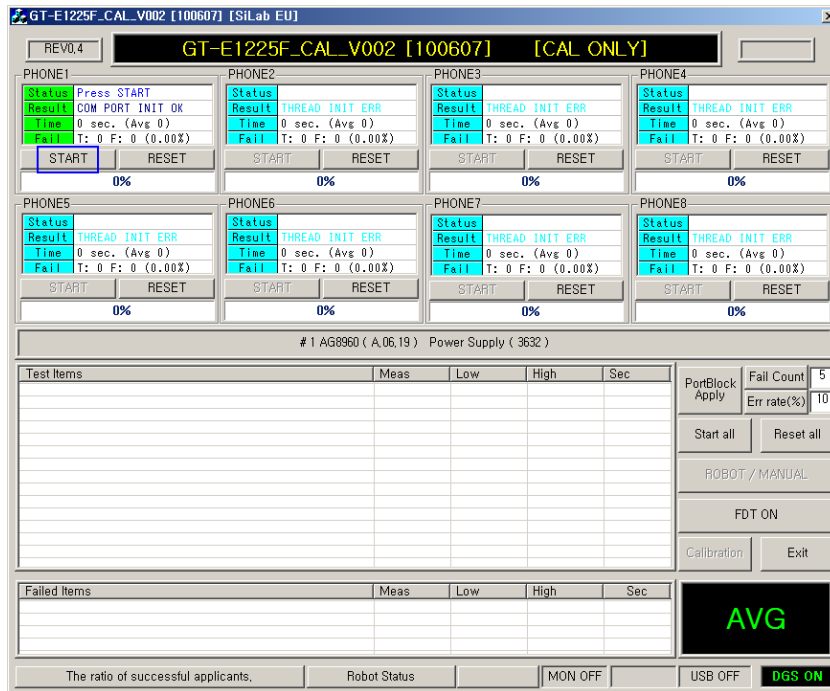


5) Setting the Config Test

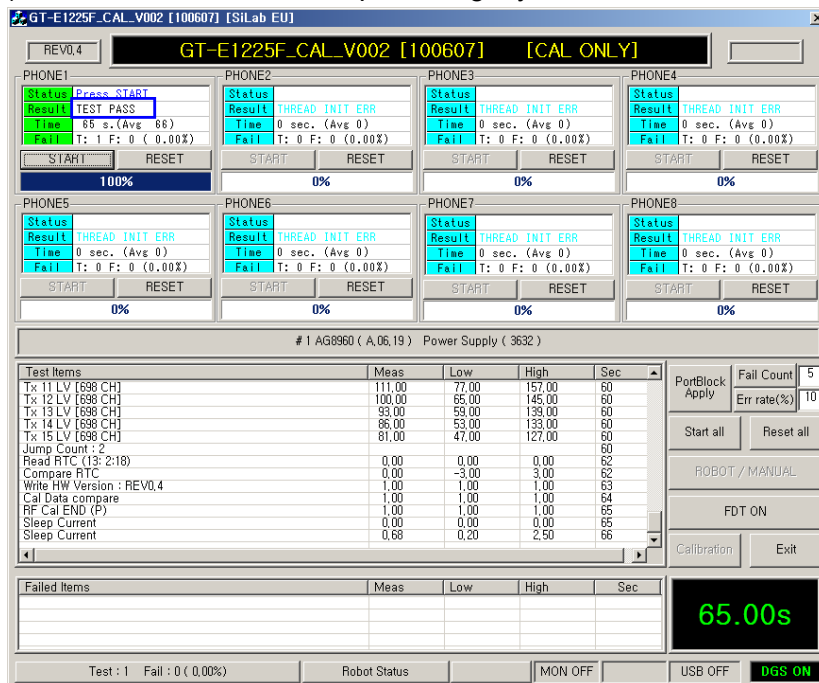
- ① Write a H/W Version.
- ② Select "Use Anyway Jig"
- ③ Click the button, 'OK'.



6) Connect a mobile phone, and Click the 'START'.



8) If the calibration is completed rightly, it shows the content, 'TEST PASS'.



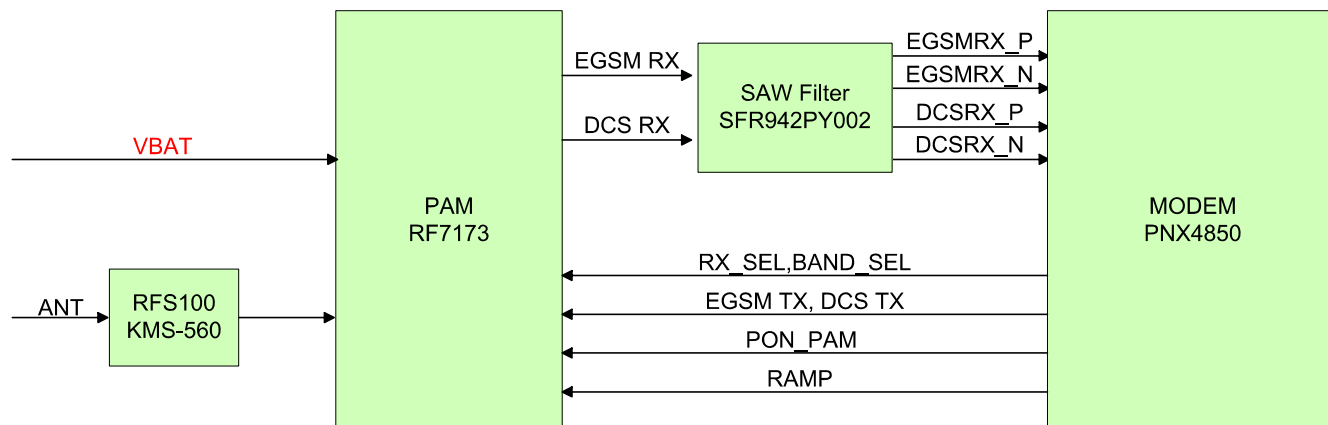
9) Refer to the result of calibration in the folder, 'C:\DGD\LOGS'.

- GT-E1225F_RFCAL_YYYYMMDD_01.csv

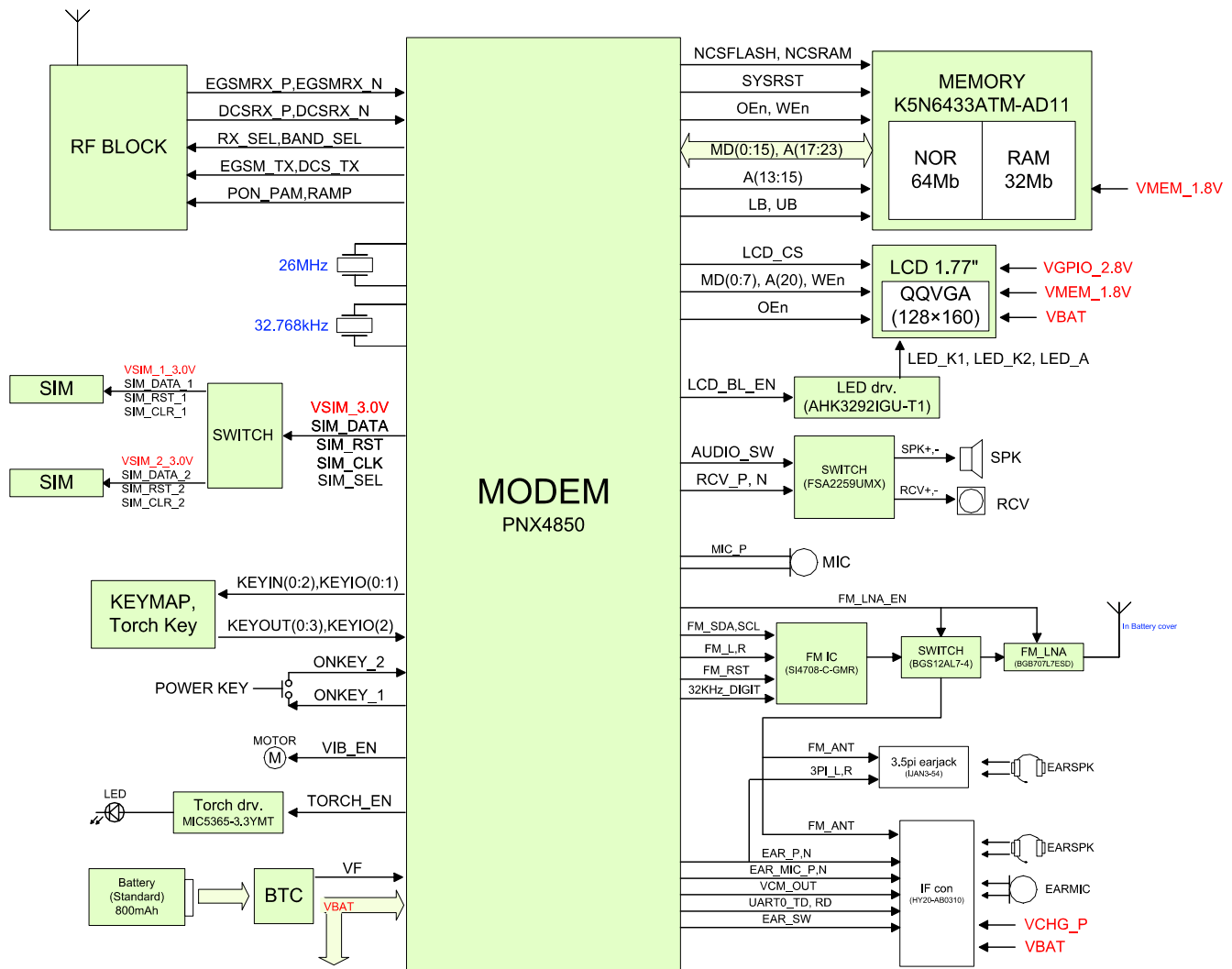
8. Level 3 Repair

8-1. Block Diagram

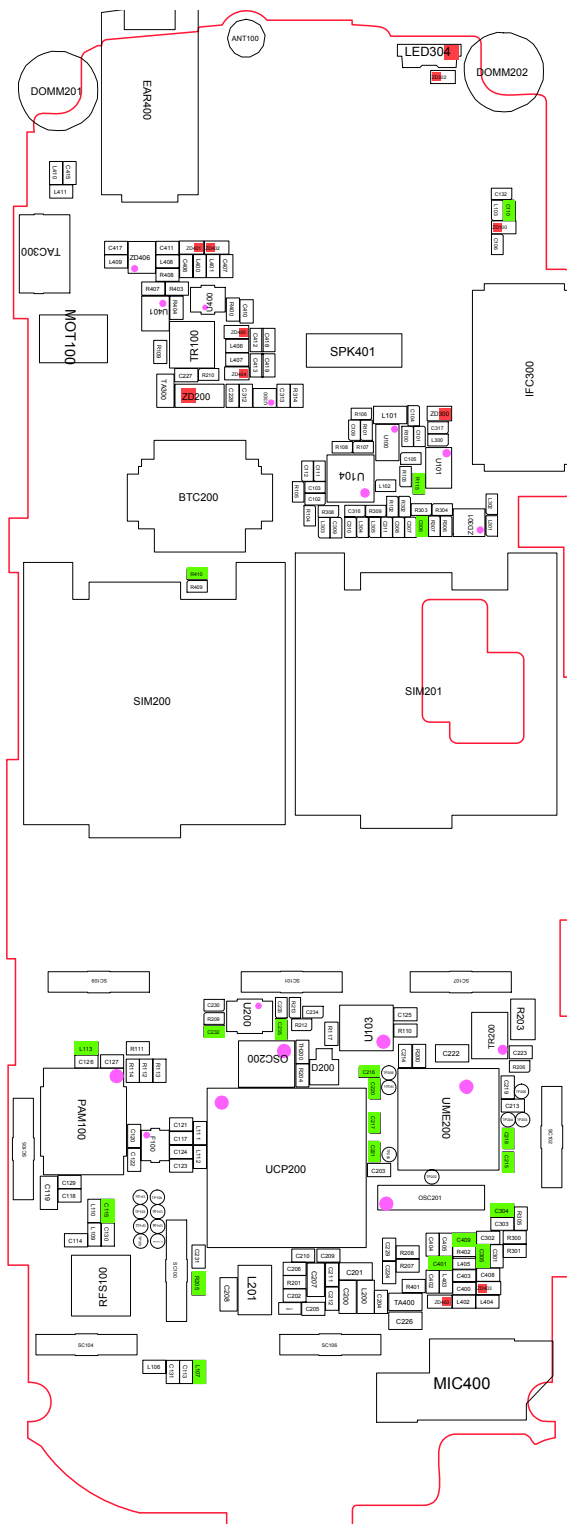
8-2-1. RF



8-2-2. BB

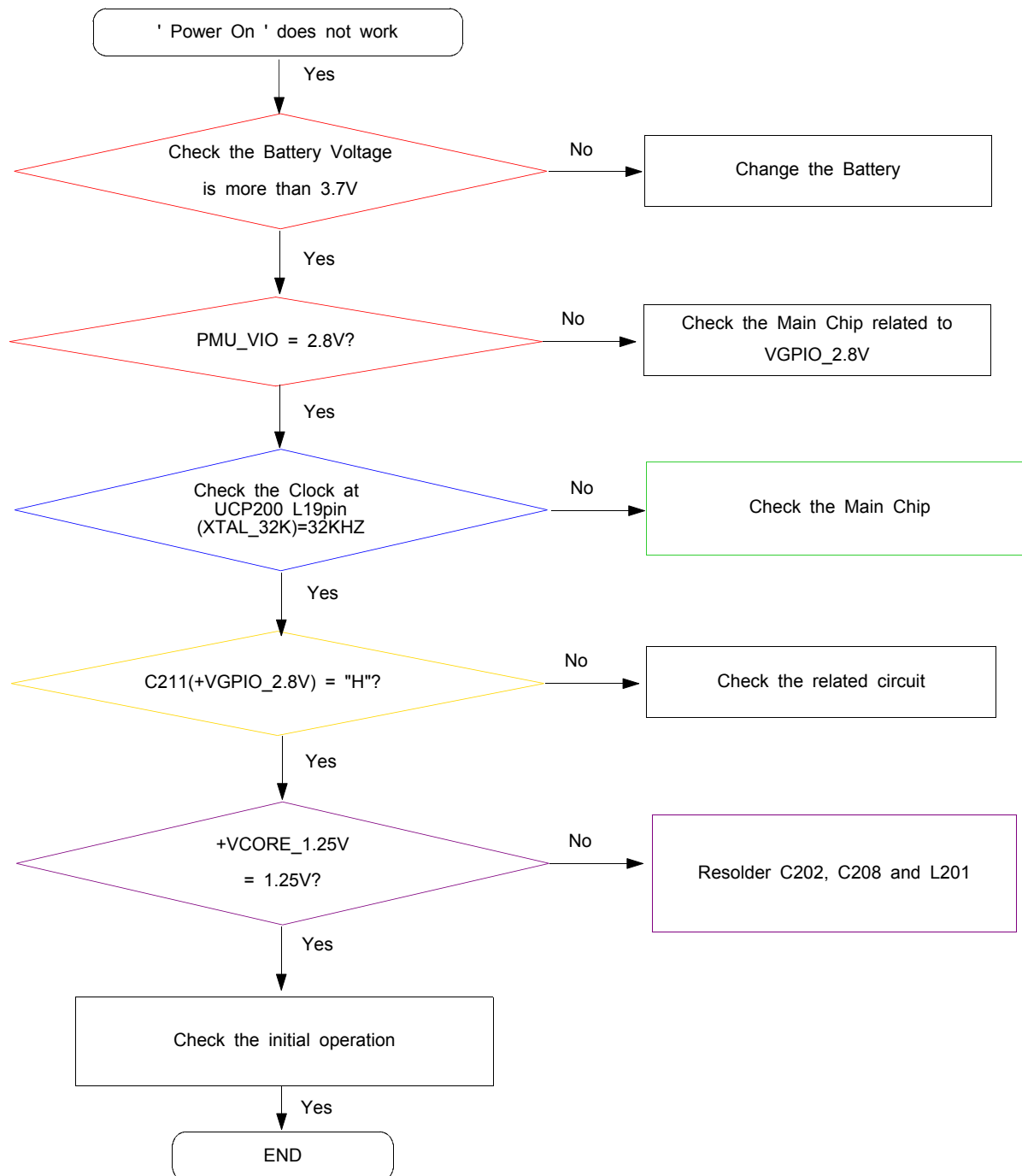


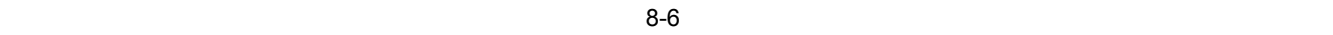
8-2-1. Bottom



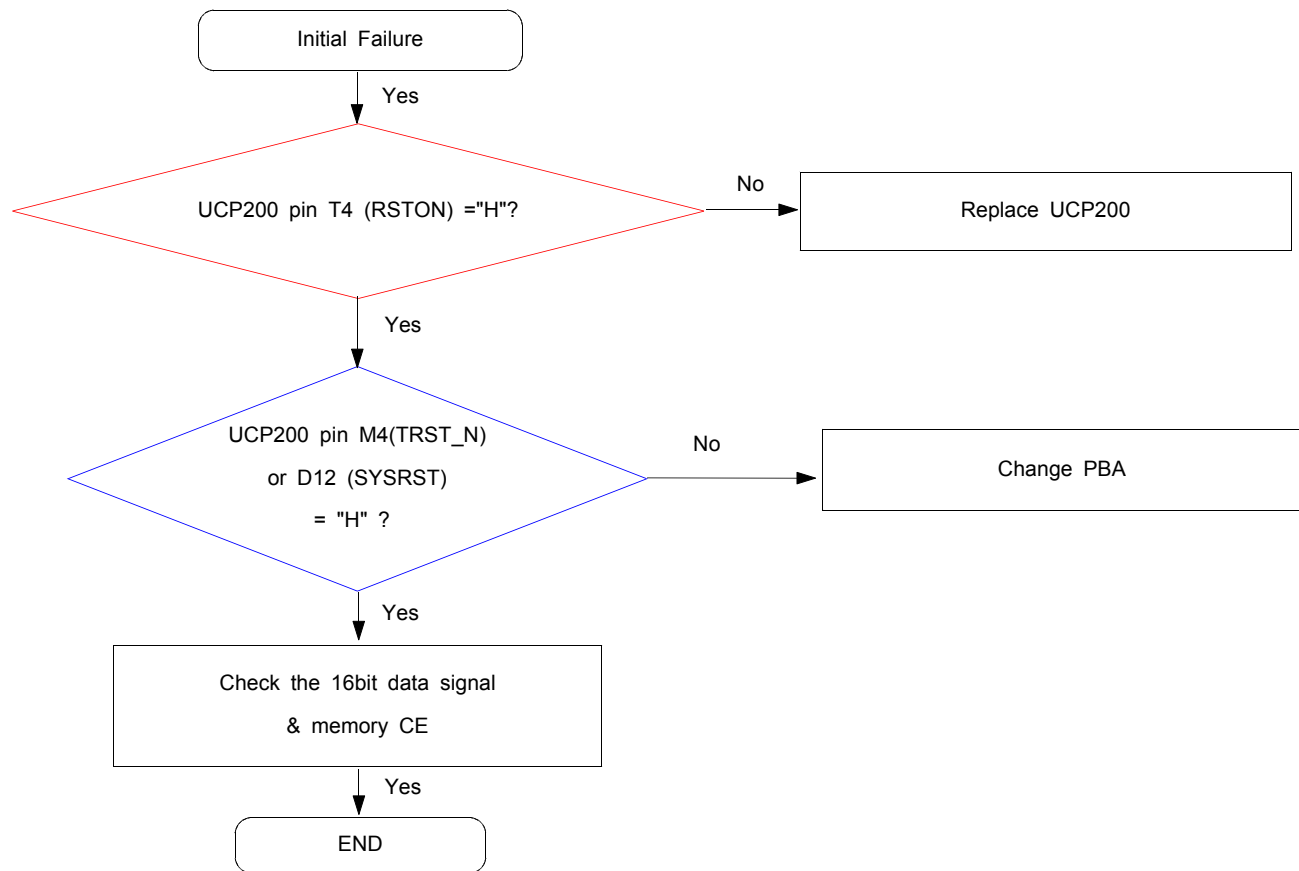
8-3. Troubleshooting

8-3-1. Power On

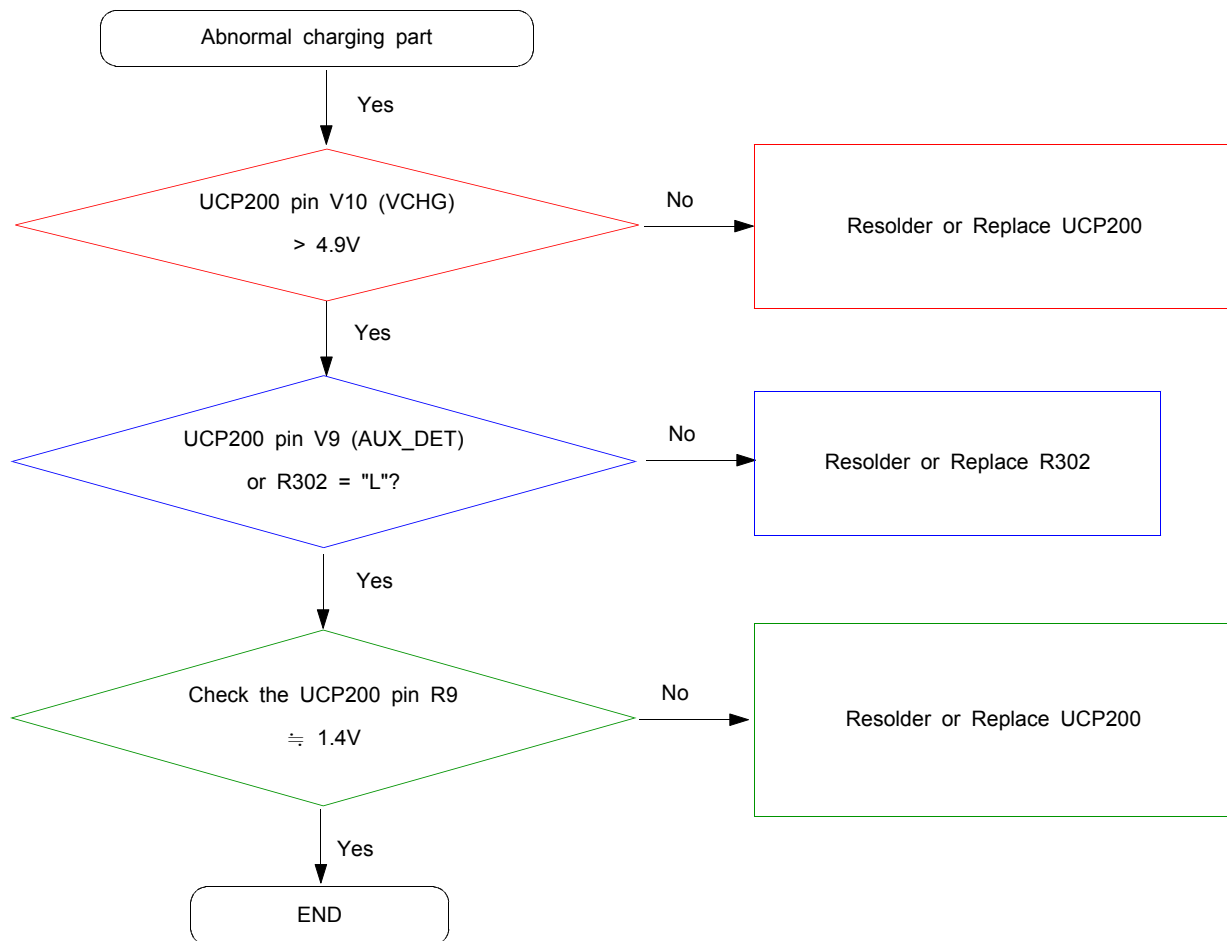




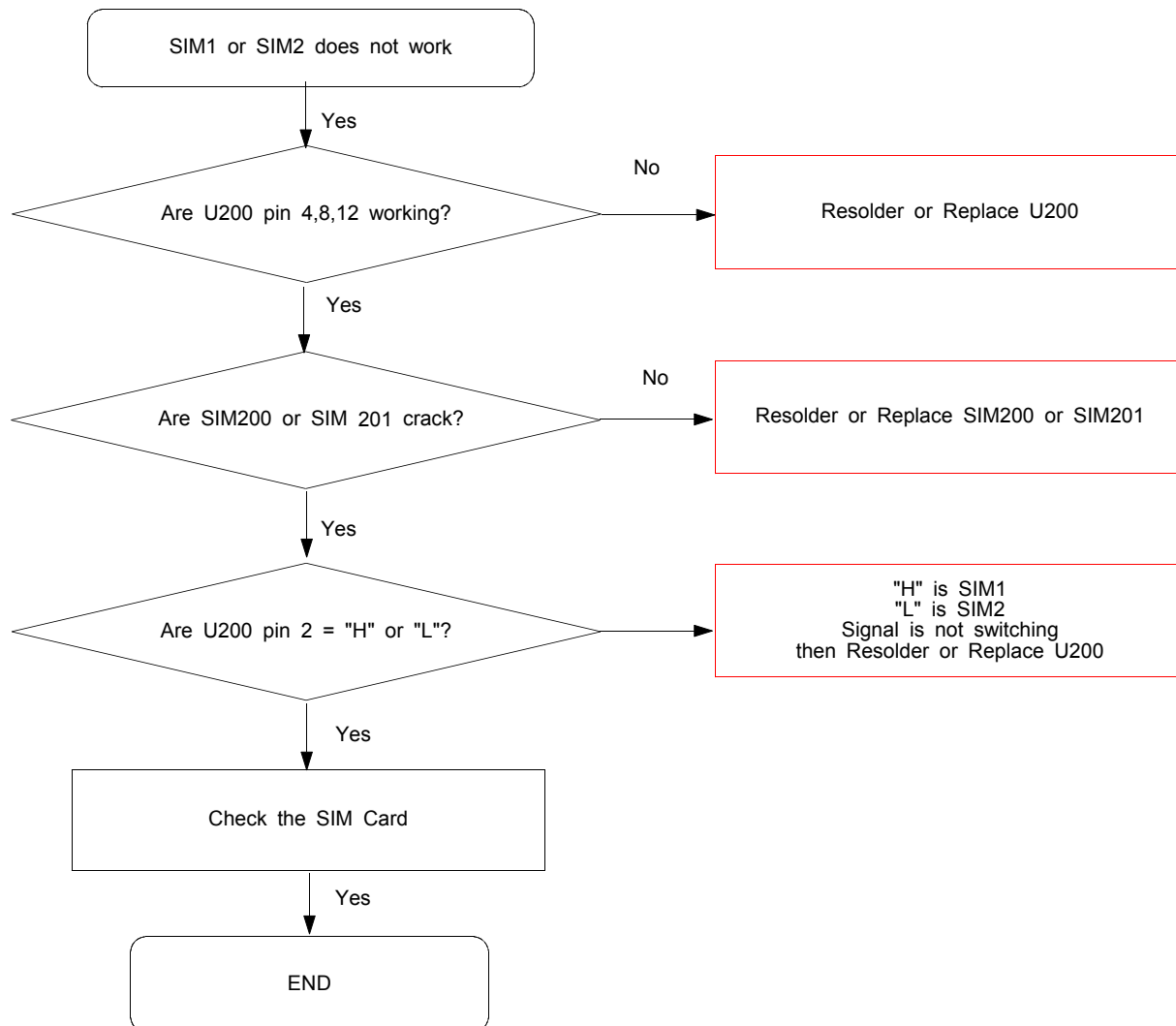
8-3-2. Initial

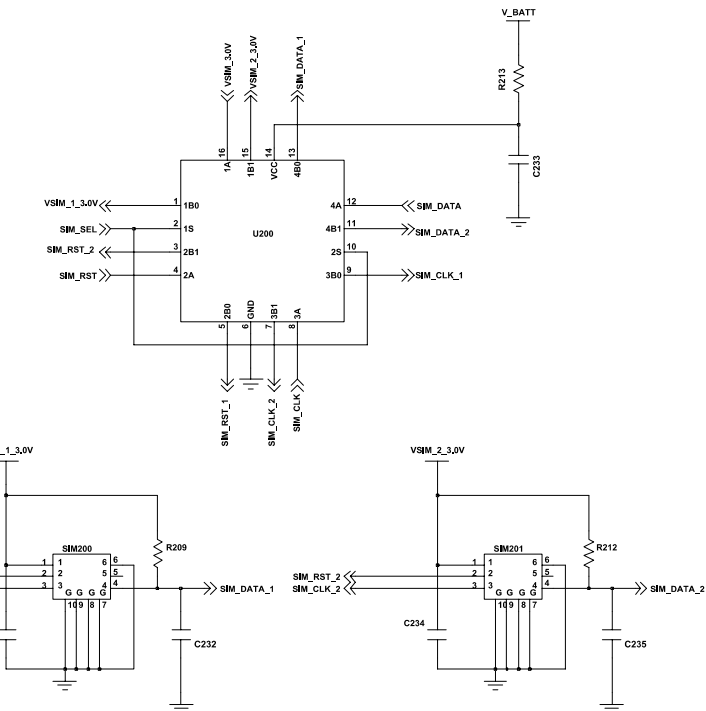


8-3-3. Charging Part

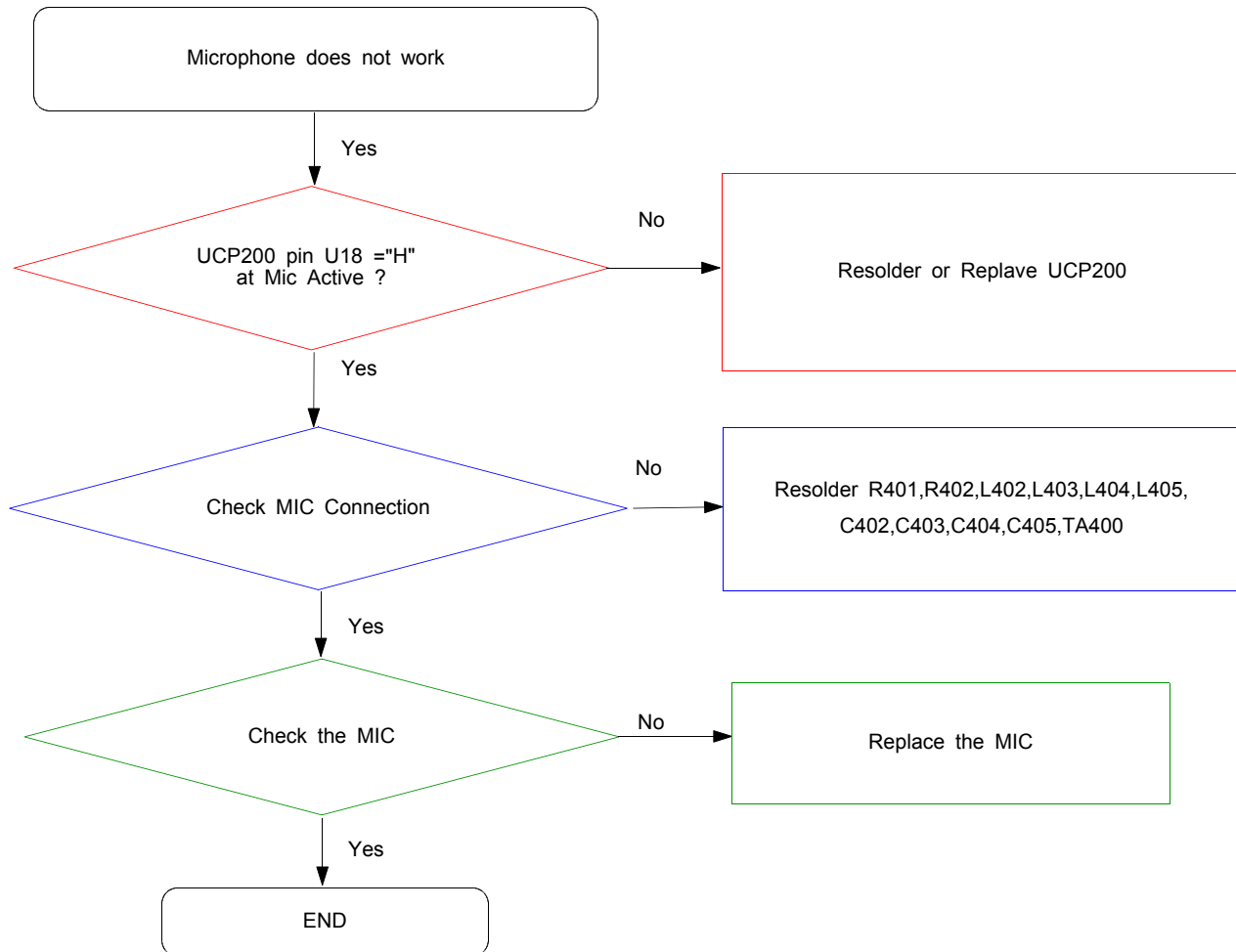


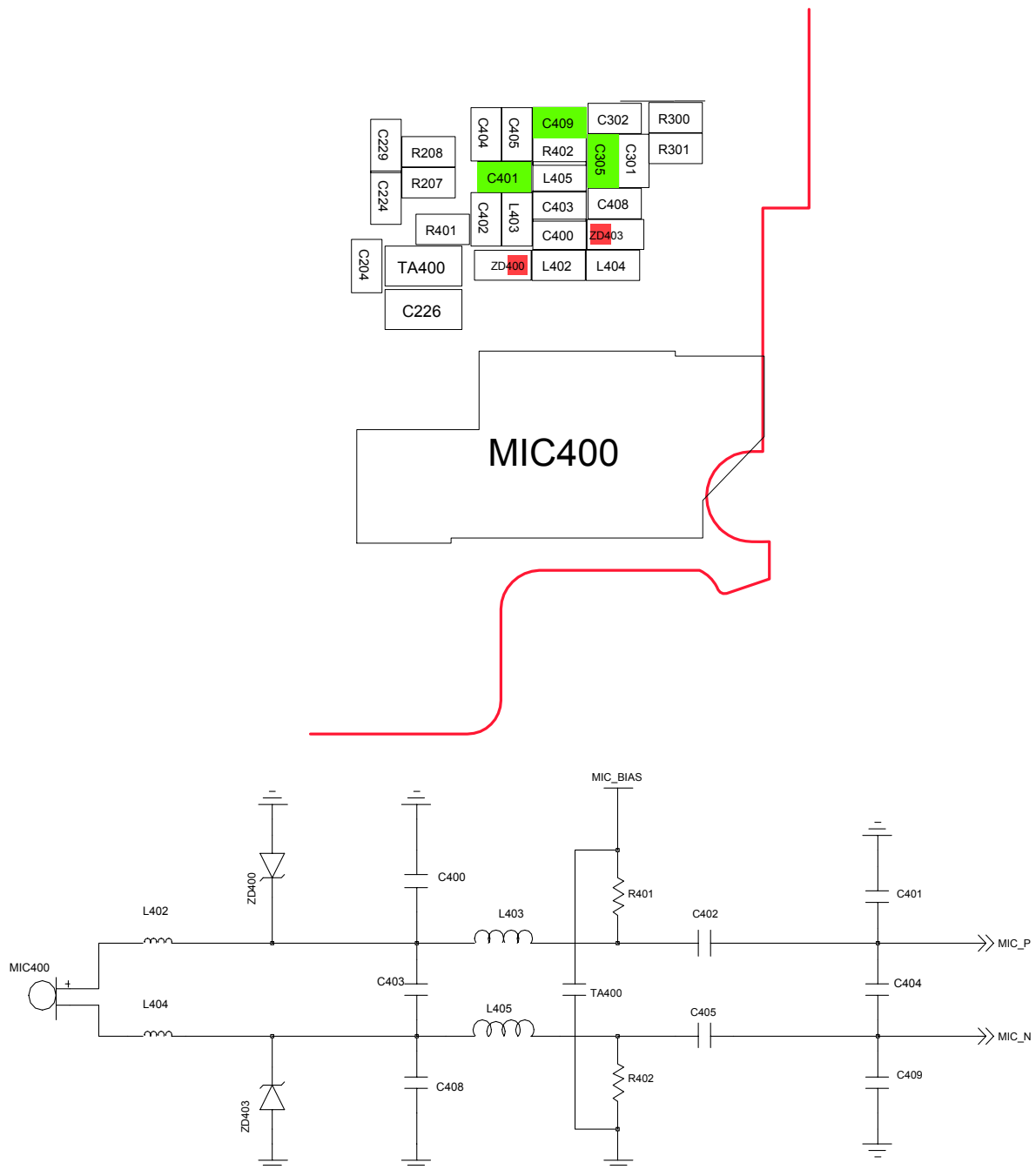
8-3-4. SIM Part



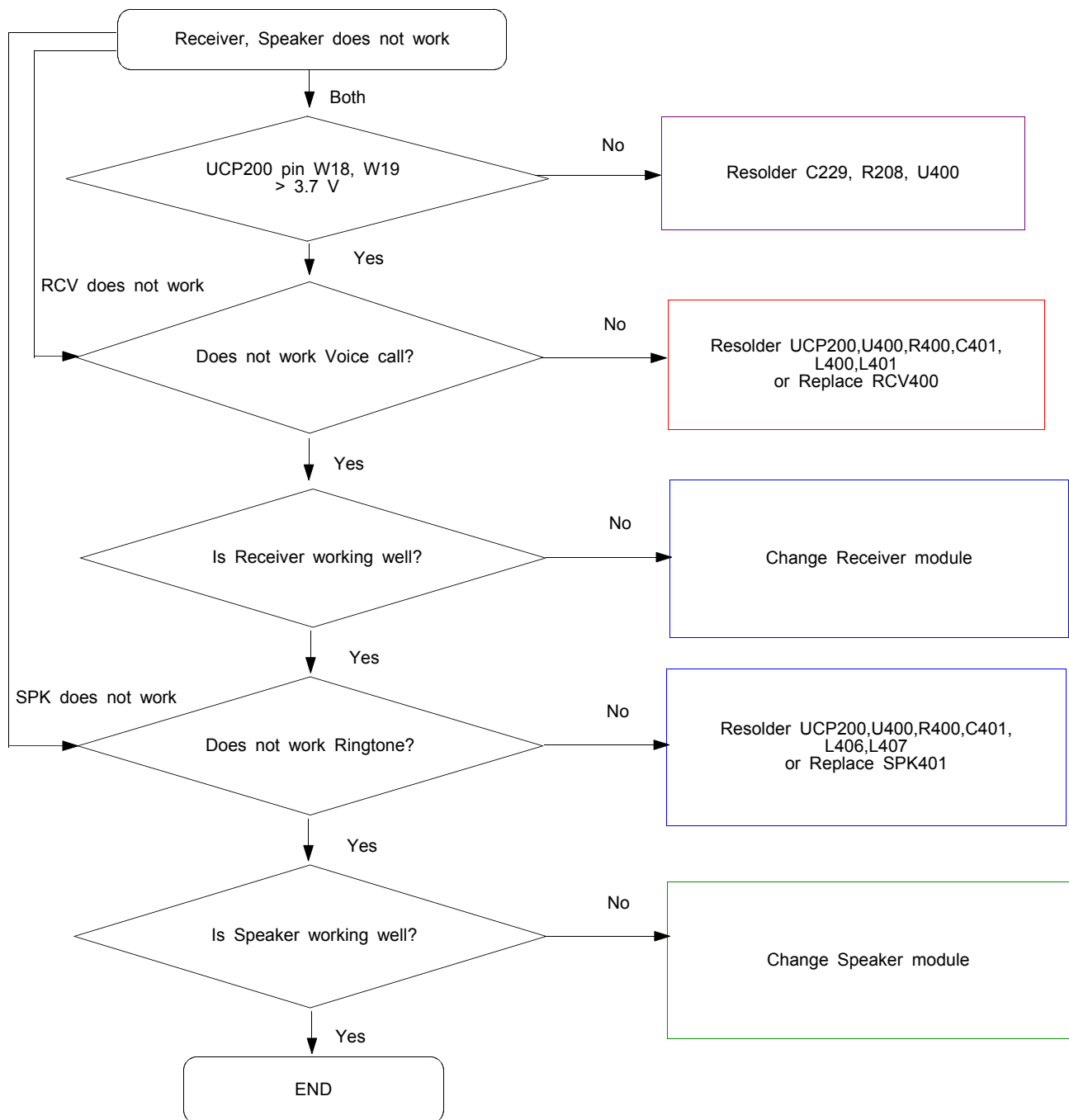


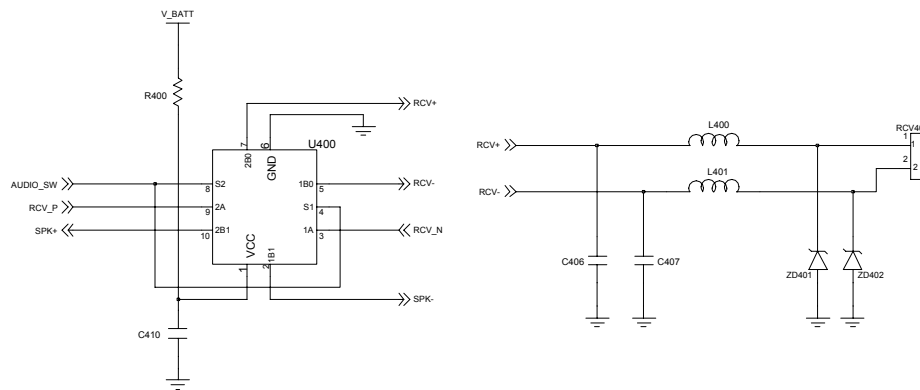
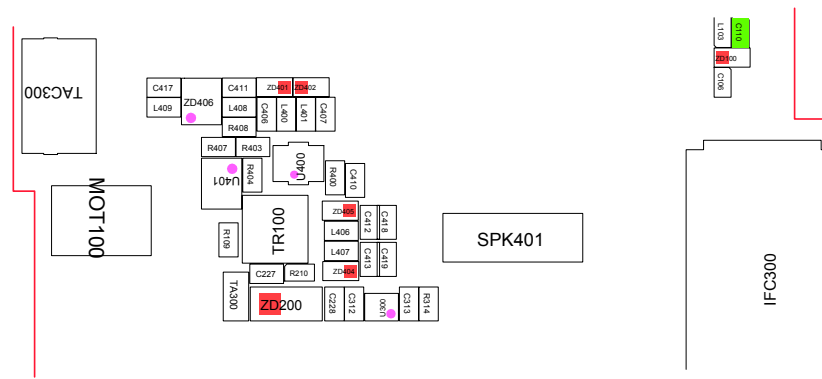
8-3-5. Microphone Part





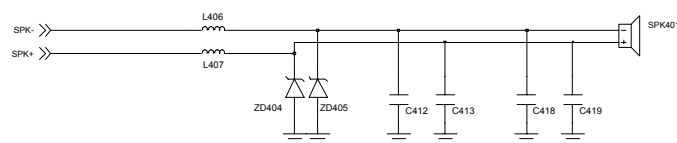
8-3-6. Receiver / Speaker Part





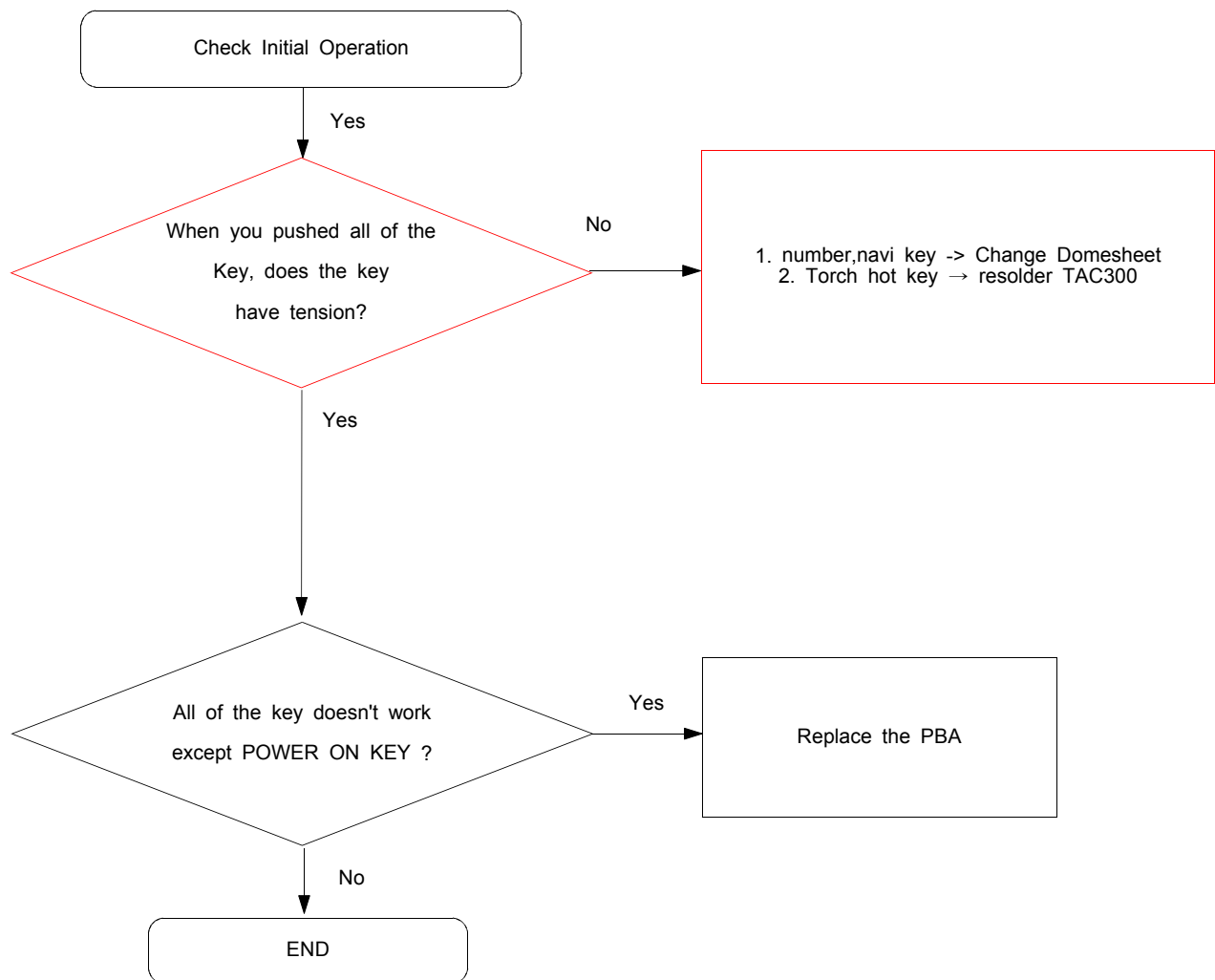
RCV/SPK SWITCH

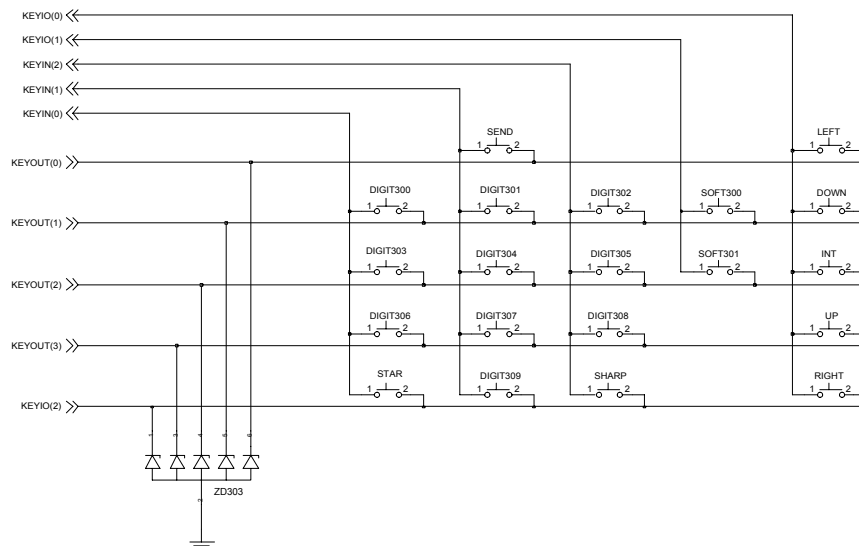
RCV



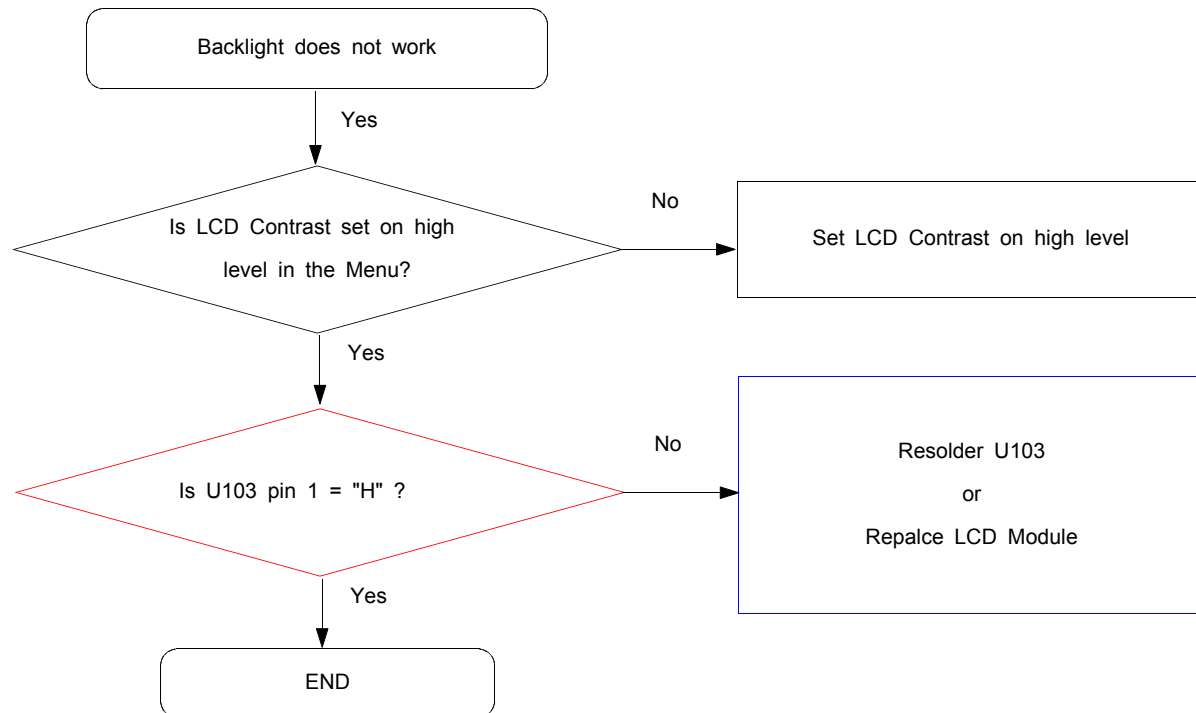
SPK

8-3-7. Key Data Input

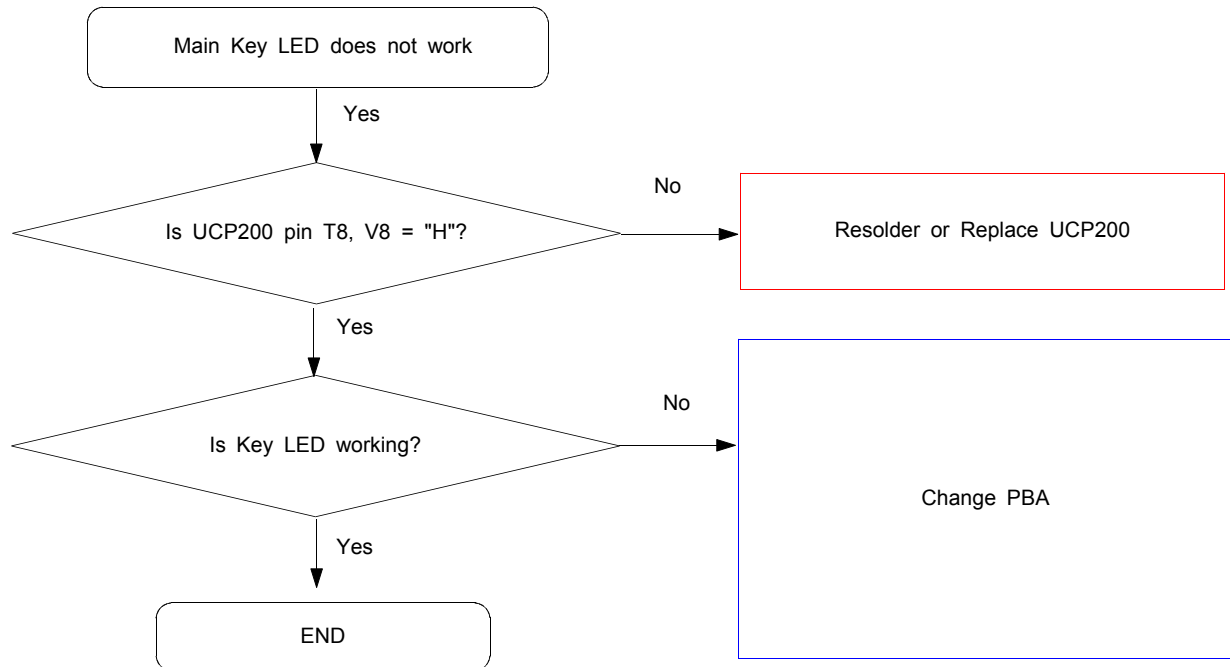




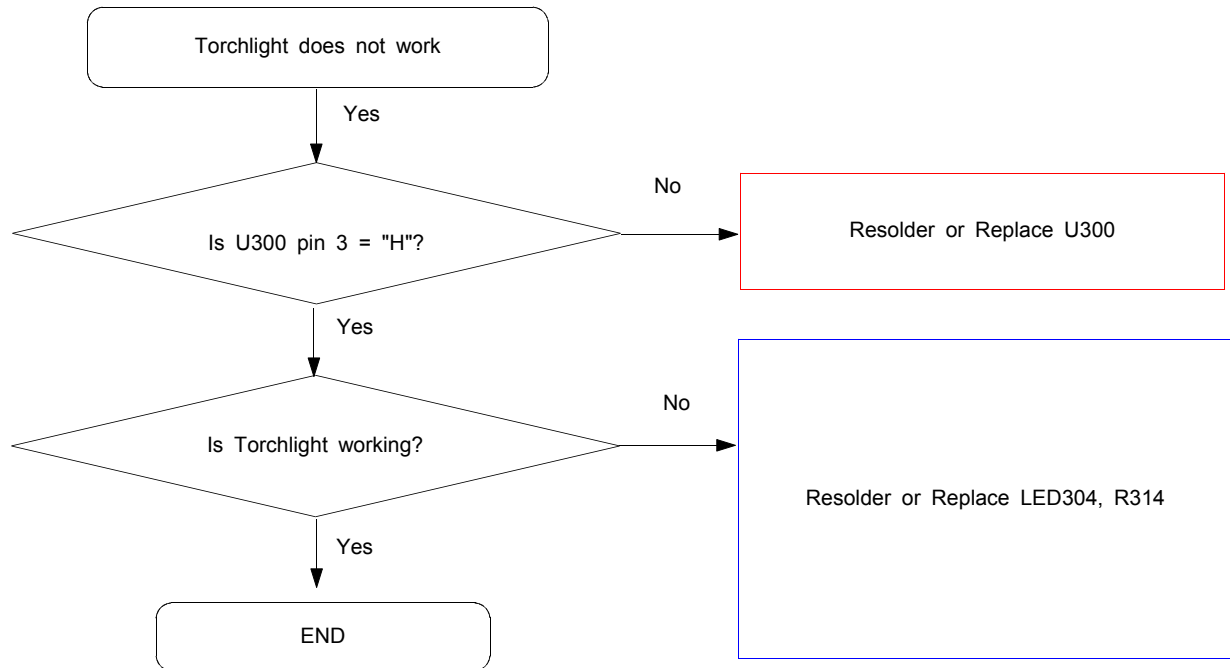
8-3-8. Back Light (for Color Main LCD)

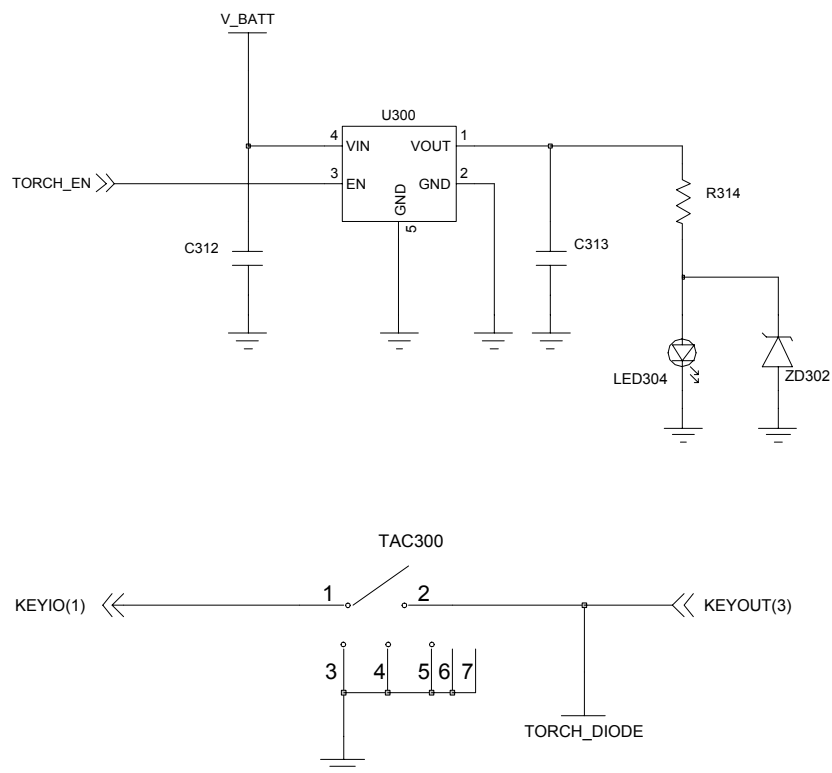


8-3-9. Key Back Light

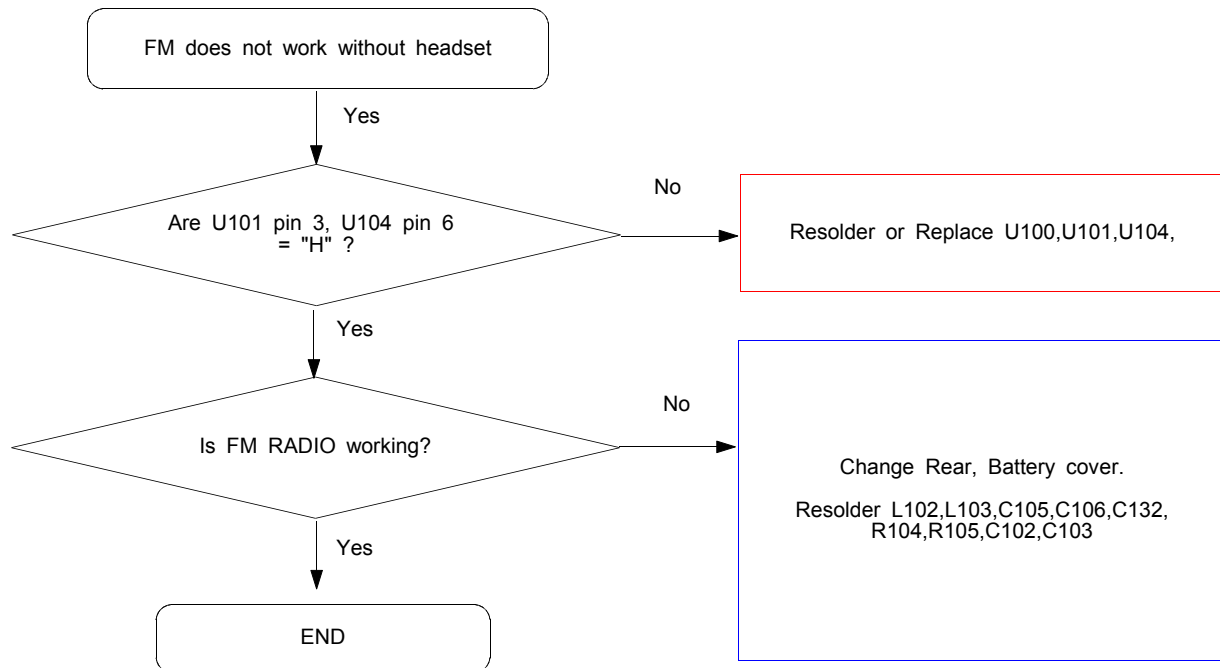


8-3-10. Torch light

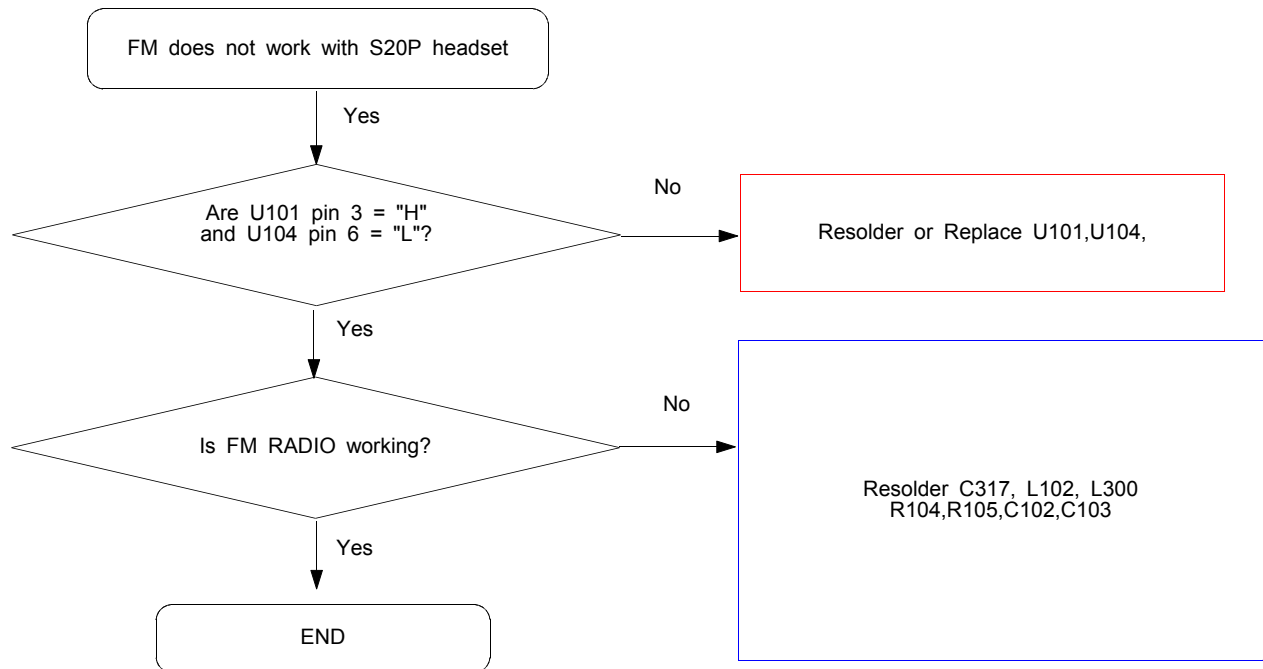




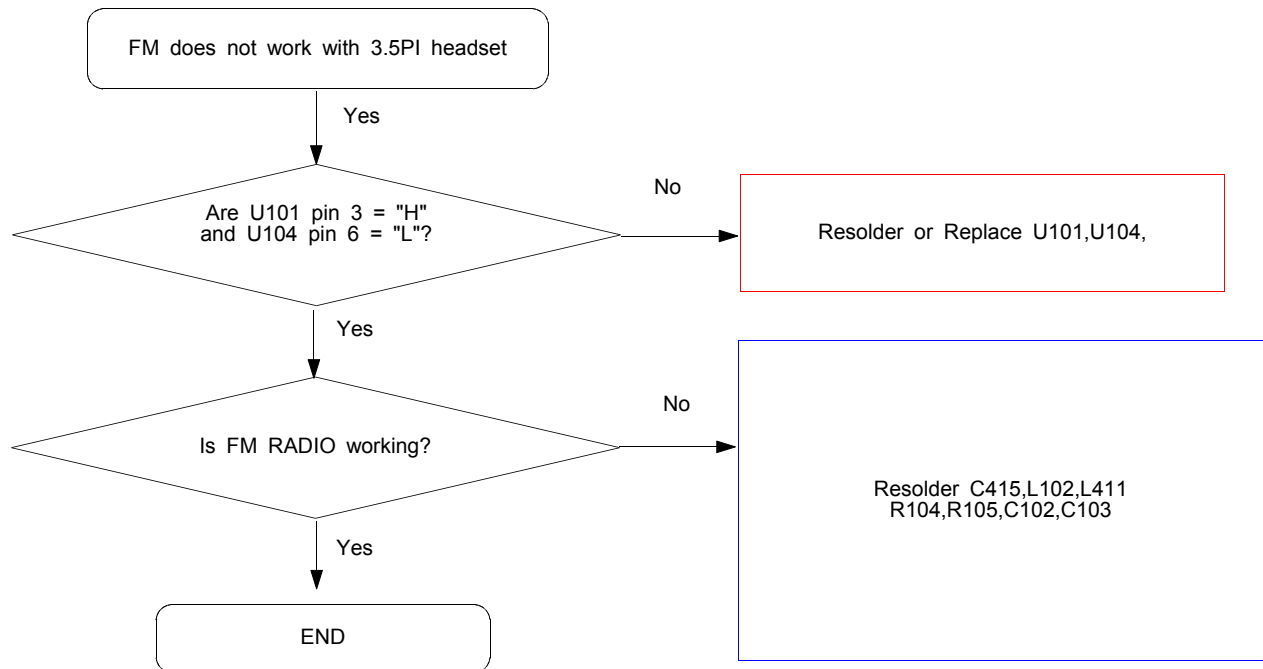
8-3-11.1 FM RADIO without headset

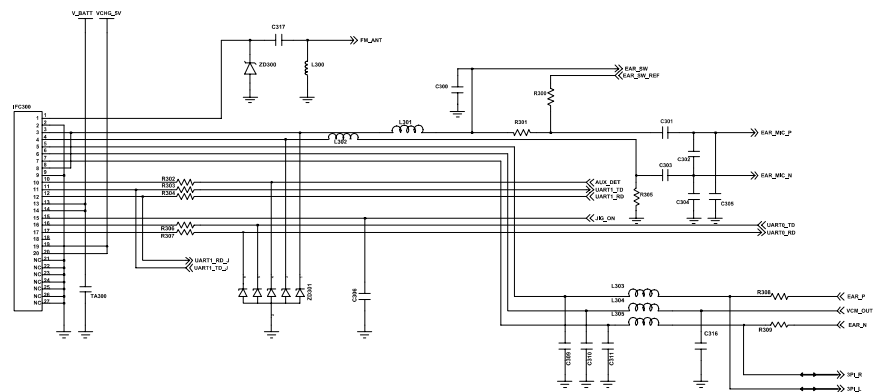
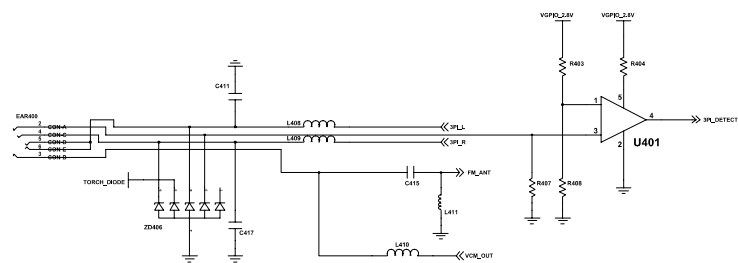
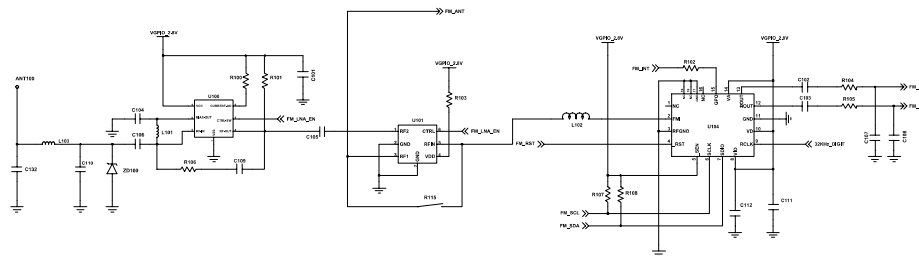
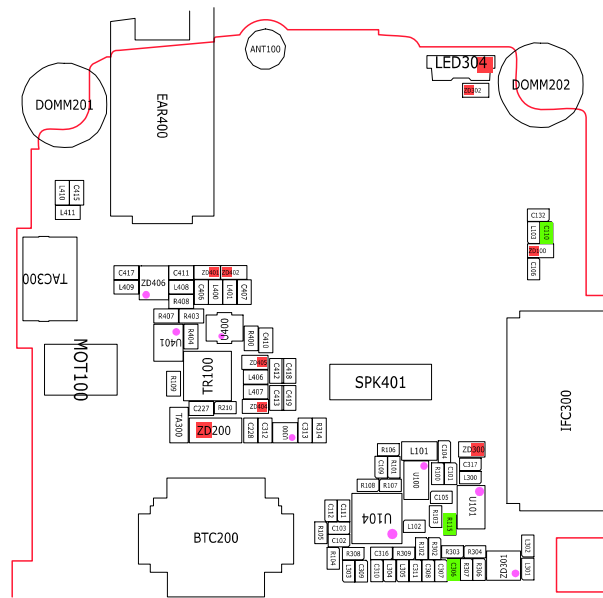


8-3-11.2 FM RADIO with S20P headset

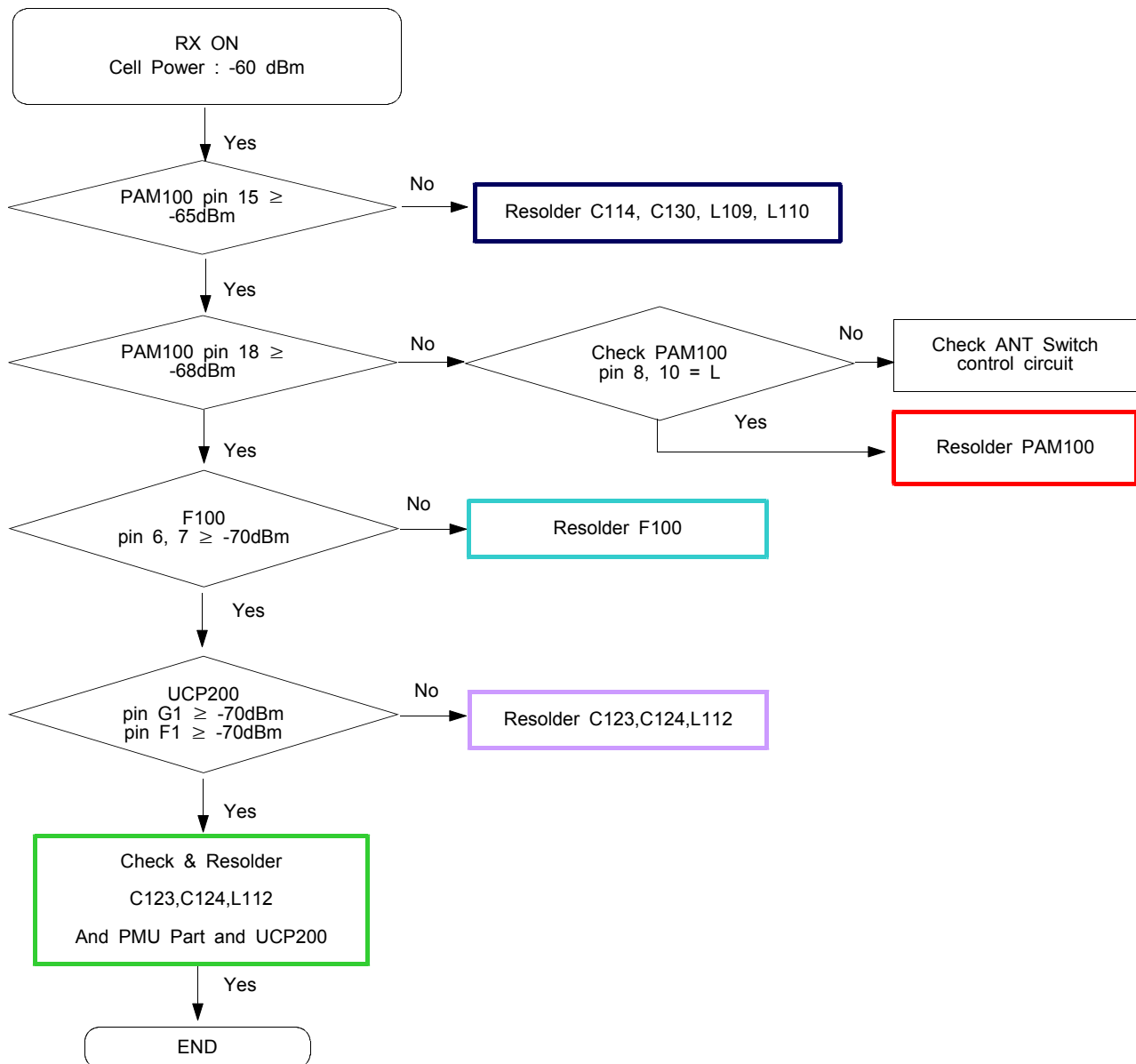


8-3-11.3 FM RADIO with 3.5PI headset

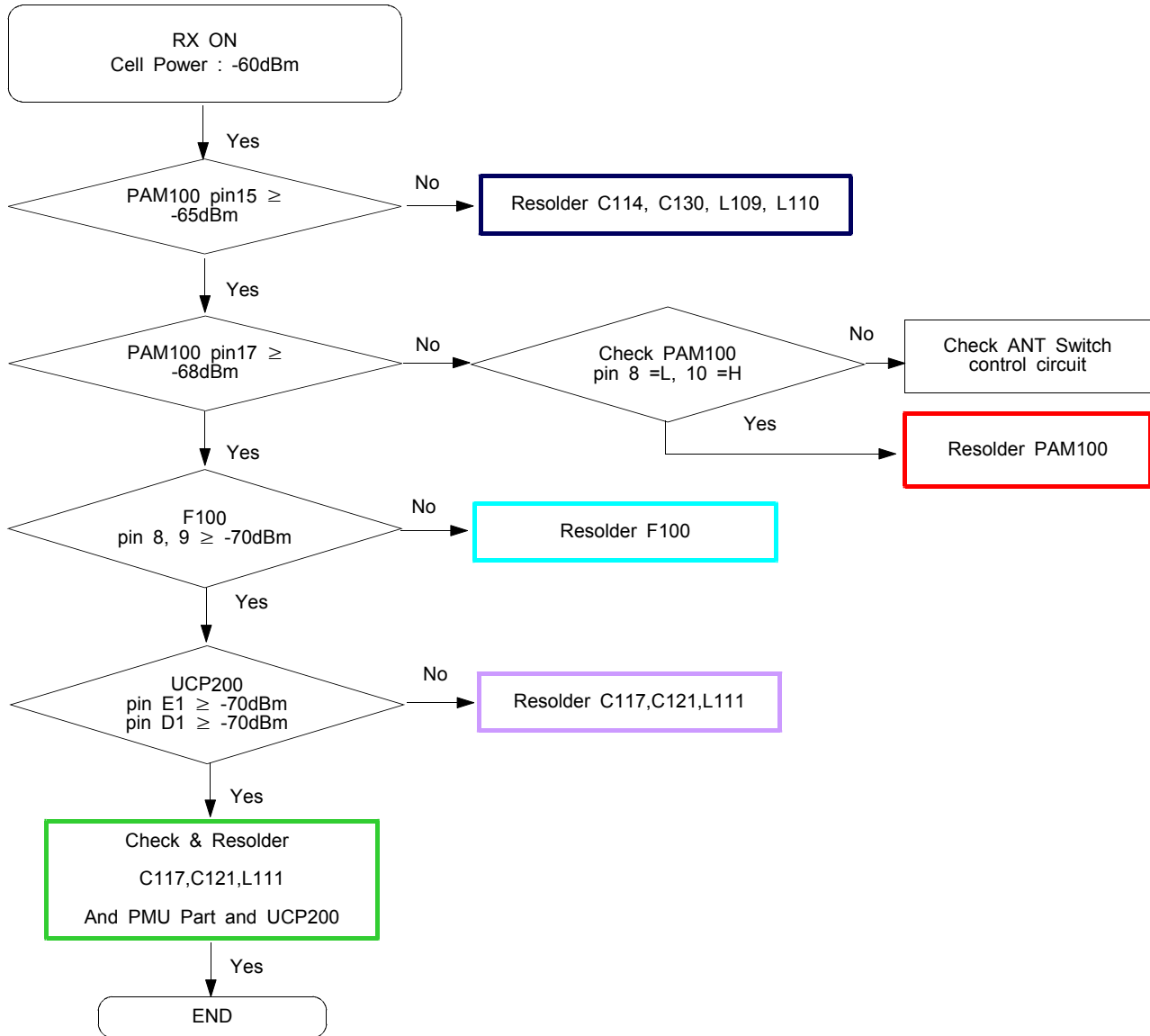




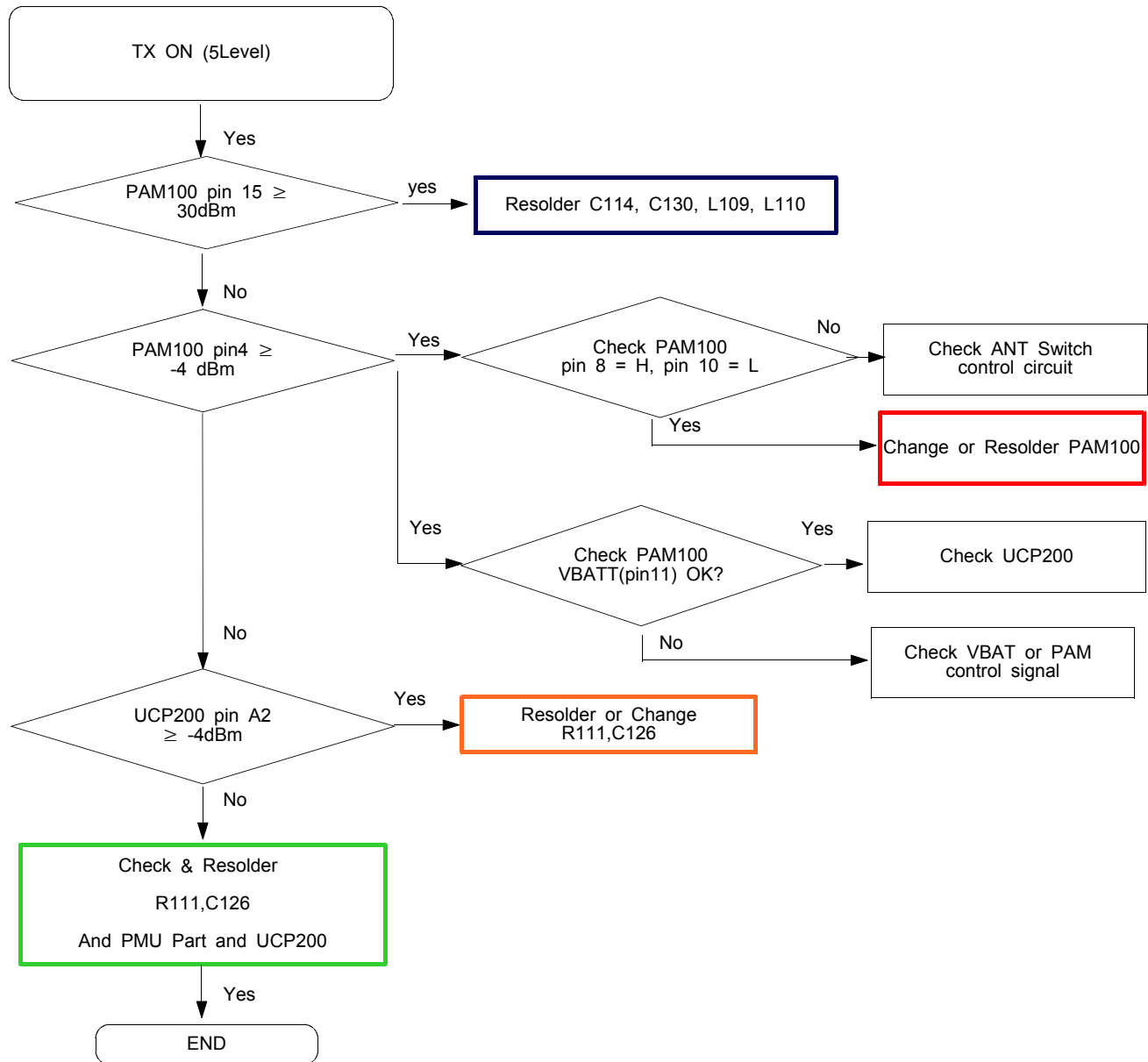
8-3-12. GSM900 Receiver



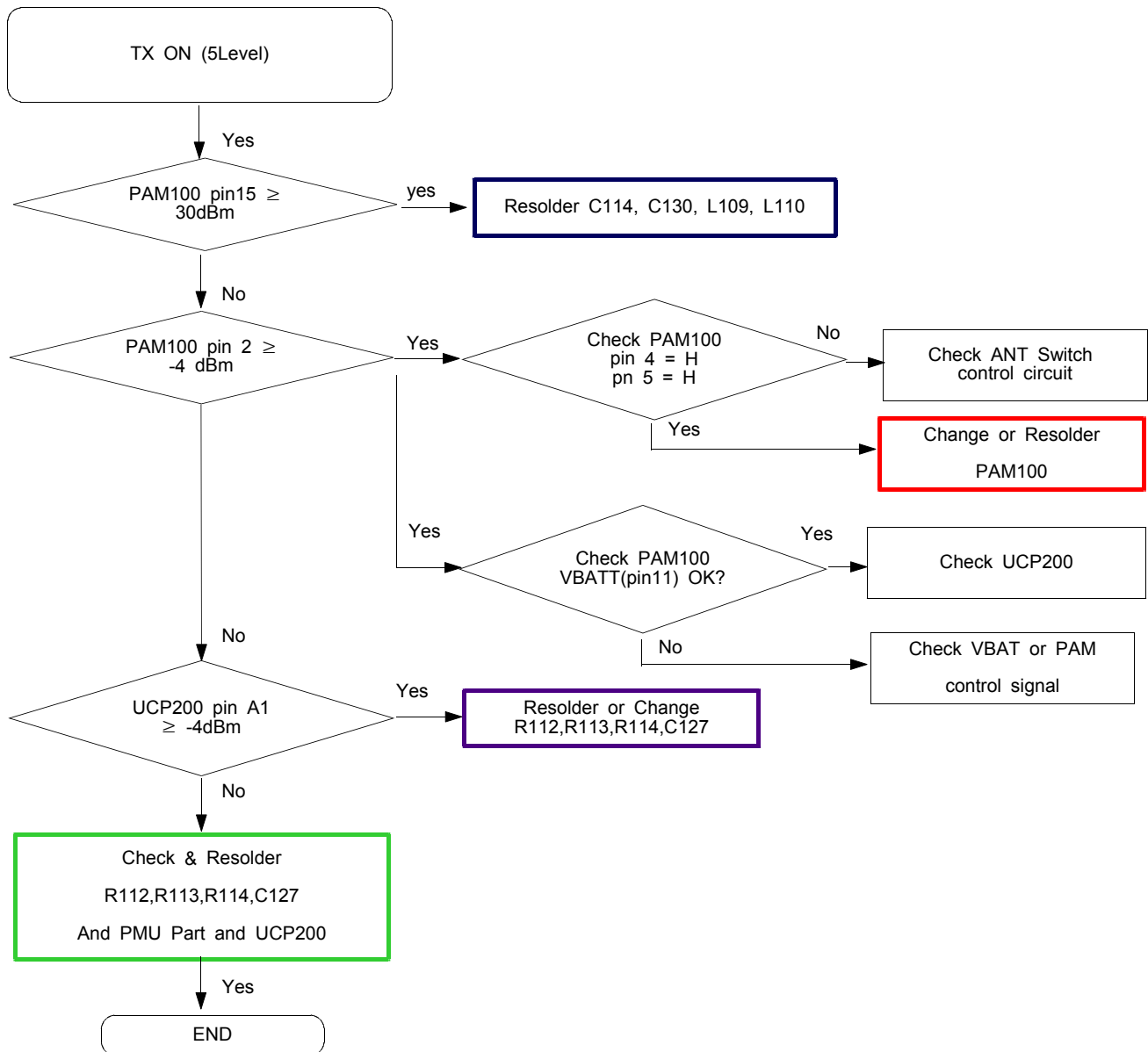
8-3-13. DCS Receiver



8-3-14. GSM900 Transmitter



8-3-15. DCS Transmitter



8-4. Service Schematics

- NC Point(Top View)

● : NC

UCP200

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
A																				A
B																				B
C																				C
D																				D
E																				E
F																				F
G																				G
H																				H
J																				J
K																				K
L																				L
M																				M
N																				N
P																				P
R																				R
T																				T
U																				U
V																				V
W																				W
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	

● : NC

UME200

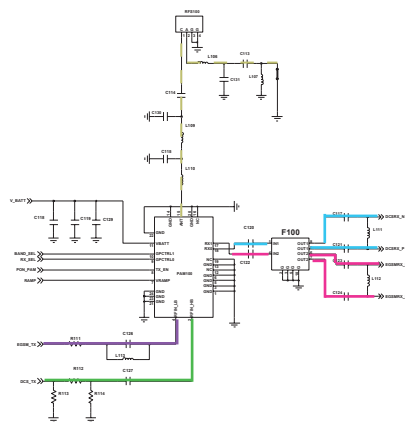
	1	2	3	4	5	6	7	8	9	10	
A	●	●			○	○			●	●	A
B	○		○	○	○	○	○	○	○	●	B
C	○	○	○	○	●	○	○	○	○	○	C
D	○	○	○	○	○	○	○	○	○	○	D
E	○	○	○	○	○	○	○	○	○	○	E
F	●	○			○	○			●	●	F
	1	2	3	4	5	6	7	8	9	10	

9. Reference Abbreviate

Reference Abbreviate

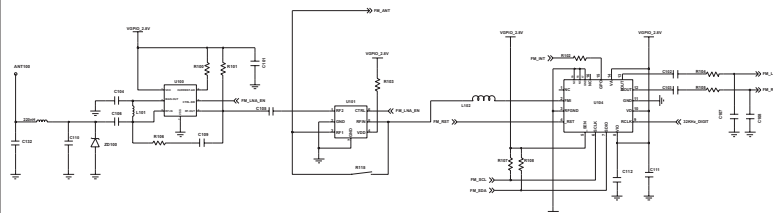
- **AAC**: Advanced Audio Coding.
- **AVC** : Advanced Video Coding.
- **BER** : Bit Error Rate
- **BPSK**: Binary Phase Shift Keying
- **CA** : Conditional Access
- **CDM** : Code Division Multiplexing
- **C/I** : Carrier to Interference
- **DMB** : Digital Multimedia Broadcasting
- **EN** : European Standard
- **ES** : Elementary Stream
- **ETSI**: European Telecommunications Standards Institute
- **MPEG**: Moving Picture Experts Group
- **PN** : Pseudo-random Noise
- **PS** : Pilot Symbol
- **QPSK**: Quadrature Phase Shift Keying
- **RS** : Reed-Solomon
- **SI** : Service Information
- **TDM** : Time Division Multiplexing
- **TS** : Transport Stream

GT-E1225F Service Schematics

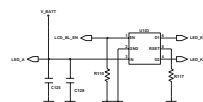


RF Part

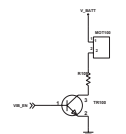
ANT ————
GSM Rx —————
DCS Rx —————
GSM Tx —————
DCS Tx —————
POWER ON —————



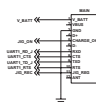
FM_RADIO



LCD BACKLIGHT

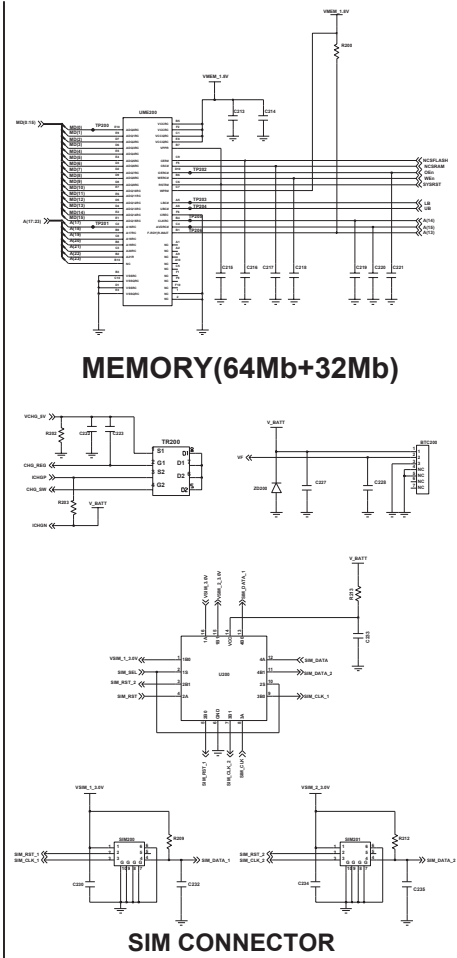
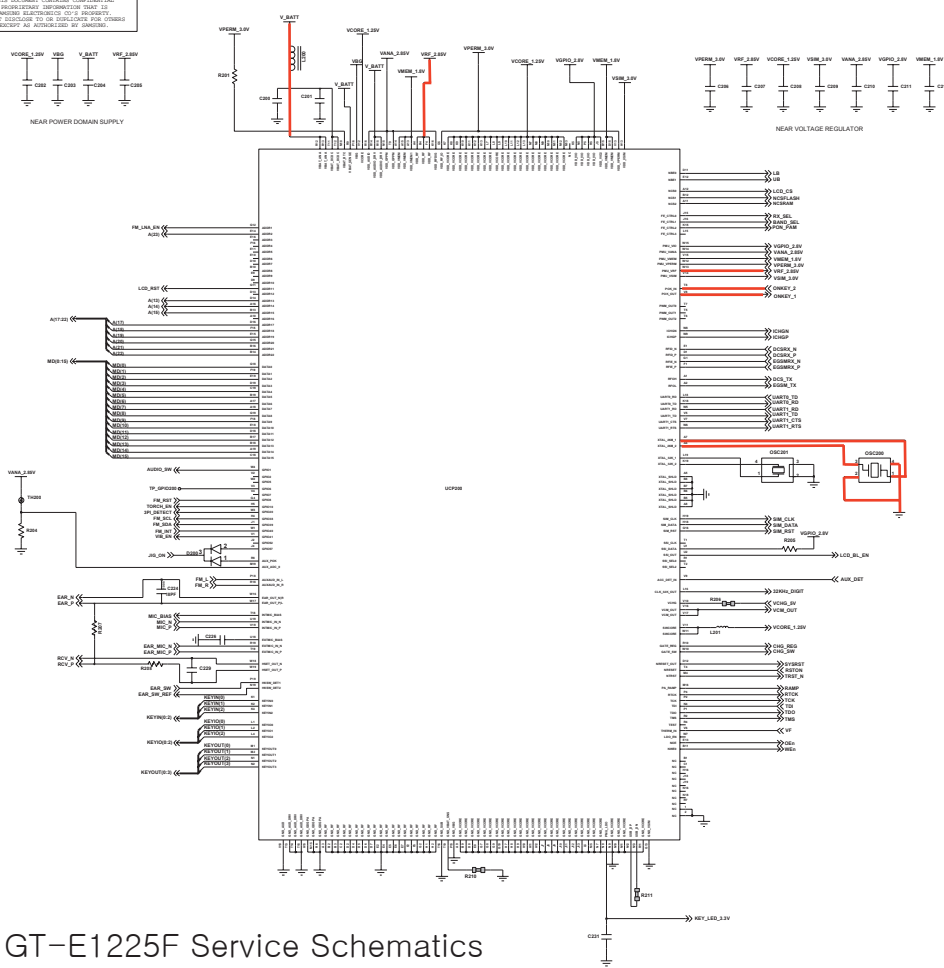


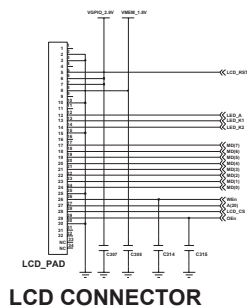
VIBRATOR



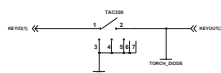
JTAG_BD



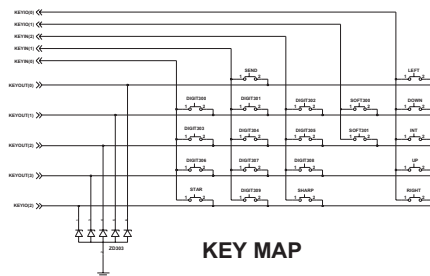




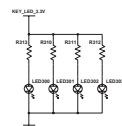
Digital External Interface- UART



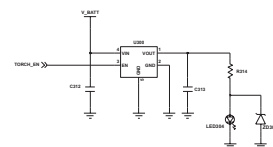
TORCH HOT KEY



KEY MAP

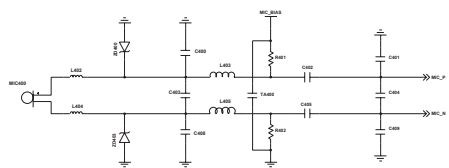


KEY LED

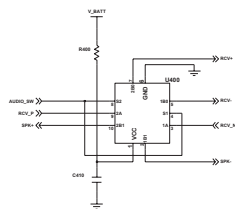


TORCH DRIVER

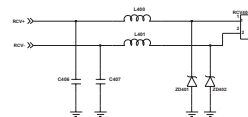
GT-E1225F Service Schematics



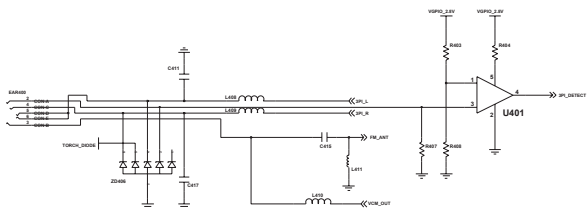
MAIN MIC



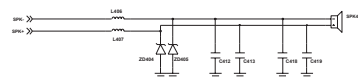
RCV/SPK SWITCH



RCV



3.5PI EAR-JACK



SPK

**SAMSUNG
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